California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

D'Arcy Power, M. D. René Bine, M. D.
A. J. Lartigau, M. D. Sol. Hyman, M. D.
R. E. Bering, M. D., Chairman Advertising Committee.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - -
State Journal, - - - -
Official Register, - - - -
Butler Building, San Francisco.

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X APRIL, 1912. No. 4

FORTY-SECOND ANNUAL MEETING

STATE MEDICAL SOCIETY,

DEL MONTE,

APRIL 16TH, 17TH AND 18TH.

PROGRAM

PAGE 135.

GOING?

RECORD YOUR CERTIFICATE.

To practice medicine legally in this state you must first get a license from the State Board of Medical Examiners and then have that license, or certificate, recorded in the county in which you reside and practice. The recording of the license is made as much a part of the law as the getting of it, and it is just as important. The Board of Examiners has found that this provision of the law has been very generally overlooked by a considerable number of physicians. This is wrong and it greatly interferes with the work of the Board in looking up illegal practitioners. It has therefore been decided to enforce rigidly this provision and after due warning has been given, to arrest such licensed physicians as have not complied with the law in this particular. If you have not had your license recorded, attend to the matter at once or you may be one of those to be arrested; you never can tell.

A COUPLE OF FAKES.

Once more the thought comes to mind that there must be a good many very credulous (and shall we say ignorant?) members of our profession, or else there are many foolish manufacturers trying to foist worthless stuff upon us. All of which is caused by two pieces of recently received so-called "literature"—a beautiful word used by the manufacturer to designate the advertising stuff he sends to trusting and confiding doctors. The envelope of one such morsel is decorated with this: "Epilepsy Proofs of Cures New Powerful Agent. Half pint sample to every physician express prepaid." Looking inside we find the nostrum is "bromo adonis" (catchy name!) and that the "proofs of cures" consist of a number of letters from physicians and others testifying to the wonderful results obtained with this particular nostrum. That is going some for twentieth century medical science, but it is not quite up to the mark; it is rather "old stuff" and cheaply gotten up "literature." The Vanadium Chemical Co. goes them several better in the other document referred to. This is, in appearance, a typewritten letter setting forth the more than wonderful virtues of "vanadiol." In this we get some real up-to-the-minute twentieth century science as she is scienced. We are charmed to read, and quite a bit flattered at the fact that our profound learning is known to all, that "You, of course, realize the value of active oxygen in the blood stream." To be sure, we had had a kind of indefinite notion that "active oxygen in the blood stream" would sort of mess it up a bit. Evidently, however, our knowledge was out of date, for surely a manufacturer would not say such a thing if it were not true; someone must have made some very marked advances in physiology of which we had not heard. After we have plenty of "active oxygen in the blood stream" all our troubles will be over; we will have nothing more to fear—or to hope!

EDDYISM FLIP-FLOP.

It is mighty comfortable to have something very vague and illusory to stand upon, for then you may change your attitude and shift your position with the minimum of effort and each new pose will seem quite as real as any of the old ones, because the very vagueness imparts an air of stability and in many long words there is much confusion. If you really do not know exactly what you are believing but just believe something, why then it does not matter much how you change the phraseology. Some years ago it was a fundamental pronouncement of eddyism, as nearly as any sane person could understand any of the fantastic pronouncements of that entertaining cult, that there was no such thing as disease; that everything that went wrong with an individual was due to some error of thought, or something equally satisfying and vague. As witness the now almost forgotten White Plains case in New York where a child died without medical care—but with ample eddyite assistance—and a prosecution resulted. The very existence of disease was denied by the entertaining eddyites. Now, however, things have had to be changed. There has been a great object lesson to the world in the sanitation, first of Cuba and more recently of the Canal Zone, and the more wideawake of the eddyites have recognized the fact that they cannot fool the whole world into believing that all sickness is merely "mental error" in view of these facts as demonstrated in a highly commercial and satisfactory way. Therefore they have decided that some diseases do exist and will continue to exist as long as anybody remains alive who is in error. Of course it is understood that any one is in error who does not believe all the beautiful and fanciful nonsense uttered by the deliciously commercial eddyite. This situation would be amusing even to an eddyite if he had a logical mind and a sense of humor; but as that is axiomatically impossible, let it pass. In an official communication from a gentleman by the name of Farlow to the New York *Sun*, he says, in small part: "In the case of strange or suspicious diseases the Christian Scientist acts exactly as those laymen do who are not Christian Scientists, namely, when necessary they call in a proficient medical diagnostician and abide by the legal regulations relating to such cases." Is this a really truly flip-flop, or is it merely a bunch of words? Have they decided that there are really some diseases or only some "strange or suspicious" new forms of mental error? Eddyites have been in the habit of calling in physicians—but generally it was to keep the case from the coroner. It is all quite amusing.

MORE "STATE MEDICINE."

With the growing complexity of our civilization comes a need for standardization. The microscopist buying a German lens for his American instrument expects to find the screw threads standardized. The San Francisco mother traveling with her young child, expects to secure as "certified milk" in New York, an article not differing widely as to bacterial count and chemical composition from the California product. The two bacteriologists who made counts from these widely separated milk supplies, used agar plates made according to standard methods. In almost every examination conducted in a hygienic laboratory a standard method is employed which has been formulated by a committee of the American Public Health Association. It has remained, however, for California to extend the idea of standard methods from the laboratory to general sanitary procedure. The State Board of Health has recently appointed a committee to be known as the "Committee on Standard Methods of Public Health Administration." The membership of this committee is state-wide in distribution, and consists of city and county health officers, a bacteriologist, a lawyer, and a sanitary engineer. With our existing health laws as a basis this committee hopes to report to the State Board of Health a code of regulations which will standardize and simplify the work of health officers throughout the state. Such codes have been prepared by several states, but so far as can be learned this is the first instance of the work being delegated to a committee chosen from the health officers themselves. The State Board of Health is to be congratulated on attempting this work which is certainly at the forefront of progress along modern lines of public health administration.

J. N. F.

NEW YORK STATISTICS.

A glance at the vital statistics of New York State for the month of December (accidentally chosen but probably a fairly average month) is quite interesting. The report is so arranged as to give a comparison between the urban and the rural births and deaths. The urban is approximately three times the rural population and the total deaths have about the same ratio; three to one. The births, on the other hand, are nearly one to five; urban 14,926, as against 2,807 rural. As would be expected, the deaths under one year of age are very much more numerous in the cities than in the country; nearly eight to one; between one and four years the city takes ten times the death toll that the country does and it maintains a larger percentage until the age of 60 and over, when it drops to about one and one-half to one. City life is strenuous; it grinds remorselessly for sixty years and even between 40 and 59 it kills five times as many as does the rural habitat. Probably the drop in the superiority of the urban death rate in those over 60 is illustrative of the survival of the fittest; all those who could be killed off had been; only those superlatively tough could reach that age and live in New York City anyhow!

ANOTHER WHY?

Last month the JOURNAL published some editorial notes relating to distinguished physicians who had contributed articles to publications which continue to advertise nostrums and frauds that have been shown up. These remarks have created some little comment which, so far as it has come to the attention of the JOURNAL, has been entirely favorable. We shall continue to refer to the subject from time to time. In the *American Journal of Urology* for February, 1912, there is an article by Dr. M. Krotoszyner, a distinguished physician of San Francisco and for many years a prominent member of our Society. In the same issue of that medical (?) journal are to be found the following advertisements: Ergoapiol, antiphlogistine, glycothymoline, peptomangan, glycoheroin, antheol and dioradin. The list is not so large as some, but that is probably because the publication is a special one and doubtless has but a limited circulation. Does Dr. Krotoszyner know anything about the things that that journal advertises? Does he not know that ergoapiol is advertised in the newspapers; has he ever looked at the label on a bottle of glycothymoline; has he not read the exposures of the peptomangan "literature" by the A. M. A.? Surely he must be conversant with these things, but he doubtless does not realize that the publication in question carries such advertisements. He certainly would not intentionally do anything to injure the excellent work that the Association is doing through the Council on Pharmacy and Chemistry, and yet that is just what he is doing, unthinkingly, by contributing to or subscribing to a publication that will advertise these things.

A PROUD SOCIETY.

The Ramsey County (Minnesota) Medical Society must be a large, strong and proud organization and the members must consider it a distinct honor to belong to such a scientific body. It publishes a monthly medical journal known as the "St. Paul Medical Journal"—or, at least, there is at the bottom of the cover of the journal of that title, the following imprint: "Edited and published by the Ramsey County Medical Society, Saint Paul, Minnesota." It must be a great encouragement to the A. M. A. in its efforts to make the profession a little cleaner, to see the way the Ramsey County Medical Society helps along the work. The issue of this county society's journal for March contains, among others, the following choice advertisements: Grays glycerine tonic; hydroleine; papine; katharmon; Kutnow's powder; iodoneen; carabana; glycothymoline; bovinine; sal hepatica; pepto-mangan; listerine; ergoapiol; antiphlogistine; postum; fellows hypophosphites; fig syrup; pasadyne and glycoheroin. Do the members of the Ramsey County Medical Society really want to be decent, collectively? It is hard to say.

NEWS ITEMS OF INTEREST.

Elsewhere in this issue of the JOURNAL will be found some columns of news items. These are taken from press clippings from papers in California, Nevada and Honolulu, and they present several things of more or less interest. First, let it be said, that the attempt is not made to run "personals"; this is rather an experiment in the way of trying to set forth, briefly, sundry items that may or may not be personal but that have, or seem to have, some general interest aside from the merely personal one. It appears that smallpox is, speaking geographically and not numerically, pretty widely distributed throughout the state, and further, that the new vaccination law does not seem to be quite so satisfactory to the antivaccinationists as they thought it would be. That was about what was to be expected. They are just like the howlers against any form of public health bill; they all say the same thing. "Let us have *proper* regulation." But when you come right down to brass tacks, you find that any sort of regulation that really regulates, is considered by them to be not "proper." They merely want empty words and not anything that positively does something. We also see from looking over the material that the papers are printing, that a good many of them are using the copy sent out each week by the Press Bureau of the A. M. A. Quite a few papers are using this copy for editorials and a number of others are printing it merely as "readers" or news items. That is a good sign, and another good sign is to see the number of public meetings or club meetings where lectures or addresses are given by medical men on various medical or public health subjects. This, again, is the right sort of work in the right direction; all that we, as physicians, can do is to tell the people the facts and then let them weigh these facts against other people's dreams or ideas; in the end they will decide right.

CHINOSOL APPROVED.

In any fight for a good cause, to make a mistake and hurt an innocent party does the just cause a great deal of harm; more harm than many of those who are opposing it could ever do. For this reason the Editor wishes to express the keenest regret that, inadvertently and carelessly, "chinosol" was included in a list of nostrums mentioned in the March JOURNAL. Long before the Chinosol Co. had discovered the fact and called our attention to it, a correction had been prepared and will be found on another page of this issue. This was written voluntarily and with only the feeling that an injustice had been done. Whether our words would hurt the Chinosol Co. or not is a question; but to allow an error of this sort to go by without the very fullest correction would certainly hurt the effort to secure honesty of manufacture in medicinal articles. If a manufacturer is willing to submit his product to the Council on Pharmacy and Chemistry, to comply with their rules and to be perfectly honest with the medical profession, he certainly should

get the support and the confidence of the profession and of the medical press and not abuse, accidental or otherwise.

This is the first instance since the organization of the Council that an article approved by it has been referred to in this JOURNAL as a "nostrum" or in any such way criticised, and if care will prevent it, it will be the last. Every one who knows this JOURNAL or its editor knows that it is our one desire to encourage the Council and the manufacturers who submit their products to it. On page 53 of New and Nonofficial Remedies (1911), we find, referring to chinosol, the following:

> "Actions and Uses. So far as experimental evidence goes, chinosol is non-toxic. It is a powerful antiseptic equal in this respect to mercuric chloride and considerably stronger than phenol. It exerts an antiseptic action in solutions containing one part to 5,000. It is a feeble germicide, being weaker than phenol and much weaker than mercuric chloride."

HYDROPHOBIA.

Interest in rabies has been greatly intensified by its suddenly becoming prevalent in San Francisco. During the month of February many dogs developed the characteristic symptoms and a number of human beings were bitten. Proof of the presence of rabies was secured in many cases by the demonstration of Negri bodies in the ganglion cells of the brain tissue, and in some instances by the production of the disease in laboratory animals, through inoculation. The examinations were made in the State Hygienic Laboratory in Berkeley, in the Laboratory of the San Francisco Health Department, and in the Laboratory of the Letterman General Hospital at the Presidio.

The State Board of Health has done much to minimize the number of human deaths by providing Pasteur treatment with United States Government virus for the people who have been bitten by rabid animals and are unable to be immunized at their own expense. Fortunately most of the people needing treatment are receiving it, but there are a few who listen to irresponsible talk about "hysteria," "phobias," and "imagination," and are influenced to take their chance with the disease. The first human victim of those who, from lack of knowledge or from design, are stating that the disease is merely a mental state produced by fear is at this writing passing through an agonizing death-struggle in one of the San Francisco hospitals. After being bitten while trying to treat his own dog, obviously ill with rabies, this patient talked with acquaintances who told him that the disease in human beings was merely imagination. The man was persuaded against taking treatment. Four and a half weeks later the spasms in his throat commenced and nothing could be done for him except to lessen the agony of the few remaining days of life.

The disease in San Francisco is but a small part of the epidemic which has been increasing in California during the last two and a half years. Rabies retains its foothold in Southern California and is now prevalent in the San Joaquin Valley from Bakersfield to Modesto. The number of dogs which have succumbed to the disease is estimated in the thousands. Cattle, horses, and hogs have received the infection from dogs. Several hundred persons have taken the Pasteur treatment to prevent the development of the disase after the bites of rabid animals. In California, eight persons have died with the typical symptoms of rabies.

Now a direct word to physicians: You are the authorities on health matters in your own communities and you can easily assist or greatly hinder measures for the control of rabies. There is only one feasible and successful method of controlling it and that is by the muzzling of all dogs at large so that they cannot bite each other. The physician who freely states that he has never seen a case in California and that therefore he does not believe the disease exists in the state, and the doctor who exercises his imagination devising popular substitutes for tried and efficient methods of control, make it almost impossible to produce rational legislation with regard to rabies. If physicians will inform themselves regarding this disease, new to California, it will soon be put under control through the steps obviously necessary for the protection of animals and human beings.

W. A. SAWYER.

PROGRAM STATE MEDICAL SOCIETY

Del Monte, April, 16, 17, 18, 1912

FIRST DAY.

Tuesday, April 16, 1912.

Morning Session.

9:30 A. M.

President's address and reports of committees.

A State Organization for the consideration of public and personal hygiene.

Discussed by Drs. A. E. Osborne (Napa), J. H. Parkinson (Sacramento), Ross Moore (Los Angeles), and others.

During the morning those interested in the Eye, Ear, Nose and Throat specialties will meet at some convenient time for the purpose of perfecting the organization of a section and requesting its official recognition by the State Society.

Tuesday Afternoon, 1:30 o'Clock.

Symposium on Poliomyelitis.

1. Advances in our Knowledge of Poliomyelitis Gained by Animal Experimentation.
   Prof. Hans Zinsser (Stanford). By invitation.
2. Two Cases of Poliomyelitis.
   Dr. T. M. Williams (Palo Alto).
3. The Early Diagnosis of Poliomyelitis.
   Dr. R. L. Wilbur (San Francisco).
4. The Clinical Features and Neurological Findings in Anterior Poliomyelitis.
   Dr. Thos. J. Orbison (Los Angeles).
5. The Surgical Aspects of Infantile Paralysis.
   Dr. James T. Watkins (San Francisco).

Discussion by Dr. Harry M. Sherman (San Francisco).

6. Tuberculides as Observed in Southern California.
   Dr. Ralph Williams (Los Angeles).
7. The Diagnosis of Tuberculosis of the Skin.
   Dr. D. Friedlander (San Francisco).
8. Diagnostic Value of the Pastia Sign in Scarlet Fever.
   Dr. G. H. Taubles (San Francisco).

Tuesday Afternoon, 1:30 o'Clock.

April 16, 1912.

(In a separate meeting room.)

Eye, Ear, Nose and Throat.

9. Chairman's Address: The Present and Future of the Eye and Ear Section of our State Medical Society.
   Dr. William H. Dudley (Los Angeles).
10. The Causes of Maldevelopment of the Jaws.
    Dr. Robert Dunn (San Francisco).
11. Effect of Maldevelopment of the Jaws on Nose and Throat.
    Dr. Roscoe A. Day (San Francisco).
12. Effect of Maldevelopment of the Jaws on the General Economy.
    Dr. Allen H. Suggett (San Francisco).
13. Consideration and Treatment of Some Common Diseases of the Upper Air Passages in Singers and Public Speakers.
    Dr. Charles G. Stivers (Los Angeles).
14. The Alcoholic Injection of Nerves.
    Dr. H. S. Moore (San Francisco).
15. Some Opinions Concerning Tonsil Surgery.
    Dr. C. C. Stephenson (Los Angeles).
16. Operative and Post Operative Tonsillar Hemorrhage.
    Dr. W. S. Franklin (San Francisco).

SECOND DAY.

Wednesday, April 17, 1912.

Morning Session, 9 o'Clock.

17. Report of Case of Cyst of the Brain.
    Dr. Edward T. Dillon (Los Angeles).

Discussion to be opened by Dr. Wallace I. Terry, San Francisco.

18. Some Experimental Work upon the Hypophysis Cerebri.
    Dr. H. Edward Castle (San Francisco).
19. The Operative Treatment of Fractures.
    Dr. Guy Cochran (Los Angeles).

Discussion to be opened by Dr. W. W. Richardson (Los Angeles).

20. Some Experimental Work (subject title to be given).
    Dr. Dudley Tait (San Francisco).
21. Abscess of the Liver with Report of Twenty-three Cases.
    Dr. Rae Smith (Los Angeles).
22. Some Surgical Considerations of the Caput Coli.
    Dr. Raymond Russ (San Francisco).
23. Sarcoma of the Uterus.
    Dr. Emmet Rixford (San Francisco).

Discussion to be opened by Dr. W. W. Beckett (Los Angeles).

24. Diaphragmatic Pleurisy; a Stumbling-Block in the Consideration of the Acute Abdomen.
    Dr. Daniel Crosby (Fruitvale).

Discussion by Dr. Harry Sherman (San Francisco), Dr. Wallace I. Terry (San Francisco).

25. Congenital Hydronephrosis.
    Dr. H. A. L. Ryfkogel (San Francisco).

Discussion to be opened by Dr. E. C. Moore (Los Angeles).

26. An Analysis of the Examination of Eighteen Hundred Women of the Prostitute Class in the City of San Francisco, with Special Reference to the Prevalence of Veneral Disease.
    Dr. Arthur H. Reinstein (San Francisco).

Eye, Ear, Nose and Throat.

9 o'Clock Wednesday Morning.

(In a separate meeting room.)

27. Demonstration of a Case of Pulsating Exophthalmos.
    Dr. W. F. Blake (San Francisco).
28. The Prevention of Blindness from Purulent Ophthalmia.
    Dr. Jos. M. Shaul (Santa Ana).
29. A Case of Endothelioma of the Orbit and Ethmoids.
    Dr. P. A. Jordan (San Jose).
30. General Anesthetics in Cataract Work.
    Dr. Vard H. Hulen (San Francisco), as guest.
31. Persistent Conjunctival Hyperaemia after Cataract Extraction and Its Cause. Report of Six Cases illustrating this Condition.
    Dr. P. de Obarrio (San Francisco).
32. Pathologic Conditions of the Eye Secondary to Disease of the Lymphatics of the Neck and Throat.
    Dr. E. W. Alexander (San Francisco).
33. On the Tolerance of the Vitreous to Dislocated Lenses as an Index to Reclamation in Given Cases.
    Dr. P. de Obarrio (San Francisco).
34. Baranv's Investigation on Localization in the Cerebellum.
    Dr. Kaspar Pischel (San Francisco).

Wednesday Afternoon, April 17, 1912.

[Note. There will be no session of the State Society on Wednesday afternoon, but the following program has been arranged for the Medical Milk Commissions, to be held Wednesday afternoon at 2 p. m.]

Fourth annual meeting of the California Association of Medical Milk Commissions, Hotel Del Monte, Wednesday, April 17, 1912, at 2 p. m.

1. **Progress of the Certified Milk Movement in California.** Thomas C. McCleave, M. D., president Alameda County Milk Commission.

2. Some Difficulties in Securing Laws Requiring Tuberculin Testing in Dairy Cattle. L. M. Powers, M. D., Health Commissioner Los Angeles; member Medical Milk Commission Los Angeles County Medical Association.

3. The Production of Certified Milk. H. R. Timm, A. B., Stanford. Proprietor of Timm Certified Dairy, Dixon, Calif.

4. The Necessity of Fresh Clean Milk for Infant Feeding. P. V. K. Johnson, M. D., secretary Medical Milk Commission Los Angeles County Medical Association.

5. The Relation of the Certified Milk Supply to the General Milk Supply. Adelaide Brown, M. D., president Medical Milk Commission San Francisco County Medical Society; secretary California Association of Medical Milk Commissions.

6. The Importance of Certified Milk in the Reduction of Infant Mortality. E. Charles Fleischner, M. D., secretary Medical Milk Commission San Francisco County Medical Society.

The members of the Medical Society of the State of California attending the meeting at Del Monte will be very cordially welcomed to this session.

ADELAIDE BROWN,
Secretary California Association Medical Milk Commissions.

THIRD DAY.

Thursday, April 18, 1912.

Morning Session.

9 A. M.

35. Clinical Value of the Arneth Method of Blood Examination. A Preliminary Report.
Dr. LeRoy H. Briggs (Oakland).

36. Tropical Diseases in California and Measures for Their Control.
Dr. Herbert Gunn (San Francisco).

37. The Mechanism and Clinical Aspect of Chronic Arterial Hypertension.
Dr. Robert L. Cunningham (Los Angeles).
Discussion opened by Dr. W. Ophüls (San Francisco).

38. Typhoid-Vaccination.
Major Robert Brooke, Medical Corps U. S. Army (by invitation).

39. The Relationship of Gastric Motility to Secretion.
Dr. R. S. Lavenson (Los Angeles).
Discussion opened by Dr. L. G. Visscher (Los Angeles).

40. The Role of the X-Ray in the Diagnosis of Diseases of the Stomach (illustrated by lantern slides). Dr. C. M. Cooper and Dr. Geo. L. Painter (San Francisco).
Discussion opened by Dr. Albert Soiland (Los Angeles).

41. Demonstration of Neuro-Pathological Material with Epitome of Clinical Notes.
Dr. Milton B. Lennon (San Francisco).

42. The Importance of Non-Diabetic Diaceturia.
Dr. Chas. E. Fleischner (San Francisco).
Discussion opened by Dr. P. V. K. Johnson (Los Angeles).

43. Dietetics from the Modern Standpoint.
Dr. Annie W. Williams (Hayward).

Urology.

Thursday Morning, 9 o'Clock.

(In a separate meeting room.)

44. Latent Gonorrhoea in the Female.
Dr. Walter S. Johnson (San Francisco).
Discussed by Dr. V. G. Vecki (San Francisco)

45. Exceptional Cases of Urinary Calculi.
Dr. E. G. McConnell (San Francisco).
Discussed by Dr. R. L. Rigdon (San Francisco).

46. Treatment of Renal Tuberculosis.
Dr. A. B. Grosse (San Francisco).
Discussed by Dr. M. Krotoszyner (San Francisco).

47. Clinical Aspects of Uro-Sepsis.
Dr. M. Krotoszyner (San Francisco).
Discussed by Dr. A. J. Lartigau and Dr. M. Silverberg (San Francisco).

48. Pathology and Treatment of Hypernephroma with Report of Three Cases.
Dr. George L. Eaton (San Francisco).
Discussed by Dr. G. MacGowan (Los Angeles).

Eye, Ear, Nose and Throat.

Thursday Morning, 9 o'Clock.

(In a separate meeting room.)

49. Symptomatology Hypophyseal Affections.
Dr. Chas. Minor Cooper (San Francisco).

50. Pathology of Hypophyseal Affections.
Dr. G. Y. Rusk (Berkeley).

51. X-Ray of the Hypophyseal Region.
Dr. W. W. Boardman (San Francisco).

52. Operative Procedures in Hypophyseal Affections.
Dr. H. B. Graham (San Francisco).

53. A Case of Acute Middle Ear Abscess with Sinus and Jugular Involvement of Rapid Development.
Dr. Hill Hastings (Los Angeles).

54. Vertigo.
Dr. Cullen F. Welty (San Francisco).

55. The Nose and Bodily Reflexes.
Dr. Henry Horn (San Francisco).

56. Plastic Surgery of the Nose.
Dr. Leo Eloesser (San Francisco).

57. X-Rays of the Accessory Sinuses.
Dr. G. R. Hubbell and Dr. Henry Horn (San Francisco).

58. The Complement Fixation Test and Salvarsan in Accessory Sinus Affections.
Dr. Victor Lucchetti (San Francisco).

Thursday Afternoon at 2 o'Clock.

General Session.

Symposium on the Wassermann Reaction and Salvarsan Treatment in Syphilis.

59. Experiences with the Wassermann Test.
Dr. Walter V. Brem (Los Angeles).

60. Progress in the Diagnosis and Treatment of Syphilis.
Dr. E. D. Chipman (San Francisco).

61. Abortive Treatment of Syphilis.
Dr. Howard Morrow and Dr. L. L. Schmitt (San Francisco).

62. Salvarsan in Diseases of the Nervous System.
Dr. W. F. Schaller (San Francisco).

63. Salvarsan in Late Obstinate Syphilitic Lesions of the Palms, Soles and Mucous Membranes.
Dr. D. W. Montgomery (San Francisco).

64. Salvarsan in Visceral Syphilis.
Dr. Wm. Fitch Cheney (San Francisco).

65. The Fallability of Salvarsan.
Dr. Leon J. Roth (Los Angeles).

66. Salvarsan vs. Mercury.
Dr. Victor G. Vecki (San Francisco).

67. Use of Salvarsan in Continental Europe.
Dr. Chas. D. Lockwood (Pasadena).
Discussion by Dr. L. Gross (San Francisco), Dr. G. MacGowan (Los Angeles), Dr. Leo Newmark (San Francisco), Dr. H. R. Oliver (San Francisco), and others.

ORIGINAL ARTICLES

THE LIFE OF RADIUM AND ITS THERAPEUTIC USE IN INTERNAL MEDICINE.*

By E. O. JELLINEK, M. D., San Francisco.

You remember, that if you force a sufficient electric current through the so-called Crookes tube, that this tube will display some characteristic light effects around the anode and the kathode. As the light effects displayed around the kathode are the only ones which have any bearing on the subject which we intend to investigate to-night, I will ask your permission to recall in a few words the phenomena displaying themselves around this terminal.

The dim purple light emitted from the kathode is commonly known as the kathode ray. If you perforate the kathode with little holes, there will be another display of rays behind the kathode. These were discovered by Goldstein and are named canal or Goldstein rays. Wherever the kathode rays hit a hard body,—which in the original Crookes tube was the glass wall,—a new kind of ray is produced. These new rays with their strangely penetrative power were discovered by Professor Roentgen in 1895, and have been known since as Roentgen or X-Rays. Let me add to these well-known facts, that the canal or Goldstein rays are practically most minute corpuscles thrown from the anode and charged with positive electricity; that the kathode rays are a moving stream of negatively charged electrons, and that the invisible Roentgen rays as you have seen are secondarily produced by these visible kathode rays, and that the fluorescence of the X-Ray tube is due to the impact of the cathode stream on the glass wall.

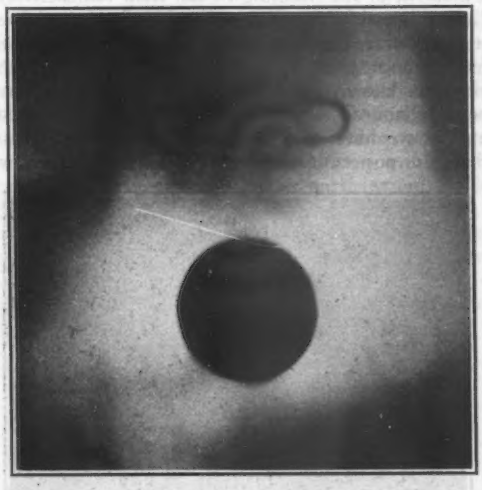
The fact that the Roentgen rays were found to be associated with the fluorescence of the glass wall, induced the physicists to investigate, if with other fluorescent bodies, which show light displays after having been exposed to bright sunlight rays were produced which had a similar effect on the photographic plate.

By great good fortune—and you all know what an important part great good fortune has played in quite a number of the most notable discoveries—Henry Becquerel chose as his trial phosphorescent body a preparation of uranium, which previously was exposed to sunlight and then placed upon a photographic plate wrapped in black paper. The result was that the photographic plate beneath the uranium preparation was darkened.

Picture No. 1.

Picture No. 2.

Entirely unlike the sunlight, this uranium preparation had sent out rays which penetrated the black envelope containing the photographic plate, and further experiments showed that these uranium rays would also penetrate thin plates of metal. And at this point great good fortune played again the leading part in Mr. Becquerel's experiment. For one day, the sun being obscure, the uranium preparation could not be exposed to sunlight, and since no after-shining could be expected, the plates with the uranium preparation were set aside in a drawer. Luckily this plate was developed several weeks later, and Mr. Becquerel found that the effect on the photographic plate was exactly the same as it was after the uranium preparation had been rendered phosphorescent by previous exposure to the sunlight. From these experiments he concluded, that the emission of the effective rays from the uranium preparation had nothing to do with a previous exposure to sunlight and a subsequent after-shining, but that these effective rays were a specific property of the uranium preparation itself; further investigations showed that the power of emitting these rays was possessed by all uranium preparations quite independent of any influence from the outside. These rays with all their specific properties, emitted from the uranium, and as later found, also from the thorium preparations—have been called in honor of their discoverer—Becquerel Rays.



Picture No. 1—A photograph obtained by placing a piece of pitchblend on a coin and a clamp, the plate and pitchblend being bound together by two strips of adhesive plaster (see text).

It being a well-known fact that the ultra violet rays, the kathode and Roentgen rays, would ionize the air, which means that they would make air known to be a bad conductor of electricity into a good one, the Becquerel rays were examined as to their ionizing properties, and it was found that the approach of a piece of uranium or any one of its salts would cause the leaves of a gold leaf electroscope, that had been previously charged with positive or negative electricity, to collapse, and from the velocity with which the collapse of the leaves takes place, we are able to calculate the ionizing power of the preparation in question.

M. and Mme. Curie, working at the time of Becquerel's discovery in his laboratory, undertook to investigate uranium, its different salts and the minerals containing it. Their investigations led to the most interesting and surprising discovery, that many of the uranium-containing minerals showed by far more ionizing power than the

* Read before the County Medical Society on September 5th and October 12th, 1911.

metal uranium itself, and the so-called pitchblend mined in Joachimsthal, in Bohemia, was found to be actually three times as ionizing as the metal uranium. The conclusion of these investigators was, that there must be some other ionizing element than uranium in the pitchblend and by chemically dividing and examining each of the so gained products as to their ionizing power, and then by further and further and still further division of these respective products they finally succeeded in separating two most effective ionizing substances, the one always accompanied by bismuth, which Mme. Curie called *Polonium,* in honor of her fatherland, Poland; the other one always accompanied by barium, which was named by her *Radium;* and it was only after treating many tons of pitchblend that Mme. Curie succeeded in producing a few decigrams of a pure Radium-chloride. The ionizing power of this radium-chloride is about a million times greater than that of uranium.

Now before proceeding any further with the properties of this new element, we will look for a moment at the meaning of the term radioactivity! Let us stop for a moment and reflect upon our stored knowledge of all our well-known elements, for instance gold, silver, lead, copper, iron, etc., elements known for hundreds of years; they have never changed, they are always the same, consisting, as we have a right to believe, of dead atoms, they do not emit any rays similar to those we have learned of, they cannot ionize the air, at least not to such an extent as to show any influence on such an extremely delicate instrument as the electroscope. And I would mention here that 1/50,000,000 of a milligram of radium, will still discharge a loaded electroscope. Maybe all these elements are not dead, maybe their atoms do undergo certain changes, but if so, these changes occur so slowly that they are inconceivable to any human conception. Now compare with these well known facts the knowledge we have gained from a study of uranium preparations and of radium! We have learned of a spontaneous and continuous emission of rays, which affect the photographic plate! That means emission of energy, and we are able to measure this energy by the fact that these so-called rays apart from their effect on the photographic plate are capable of ionizing the air. But no emission of energy could possibly occur without creation of heat! But if an atom is sending out so-called rays, which will have an effect on the photographic plate, and ionizes the air, and produces heat, and all this spontaneously and continuously, this atom must be alive, and must be continually changing! And through this process the atom of uranium changes to the atom of uranium-X, and this uranium-X into another atom, ionium, which Soddy calls the parent of radium, and this ionium by emitting energy, begets the new atom called radium, this still possessing the mentioned properties of emitting rays, of ionizing and of producing heat. It was the belief of the alchemists that it was possible to transmutate one element into another, and it was the height of their ambition to transmutate, for instance, the atom of lead into an atom of gold! And adhering to our iron barred rules as physicist and chemist we laughed at their dreaming of such a possible transmutation of atoms! But here is an atom of uranium, emitting energy and by doing so changing to the atom uranium-X, uranium-X to ionium, and the ionium by emitting energy, changing to the atom radium. In other words, we see that the transmutation of atoms into other atoms is an established fact, and this spontaneous transmutation is the foundation of a new science, the science of radioactivity, and radioactivity may be defined as the property of elements by which groups of their atoms will spontaneously change into groups of other atoms.

Picture No. 2—A photograph obtained by placing the mantel of a Welsbach light upon a metal ring and clamp. The Thorium in the mantel photographs the metallic objects and at the same time photographs itself as evidenced by the network effect. The shadow above the ring is due to a crack in the mantel.

Having rehearsed the most important fundamental principles of radioactivity, and having shown you how radium is begotten, I shall now try to show you the different transmutations of the radium atom itself with the necessary allusion to Rutherford's theory, as to how this transmutation takes place, and I shall try to describe to you the different properties of the different transmutation bodies of the atom radium.

The so-called Becquerel rays are known to consist of three kinds of different rays, called alpha, beta and gamma rays. In a short paper which I recently wrote during my stay in Germany, which paper I turned over for publication to my friend Dr. S. Lowenthal in Brunswick, after it had gained the approval of quite a number of radium authorities, I protested against this nomenclature, basing my objections upon the following consideration. In advancing new names we should choose them in such a way that the name suggests the most striking properties of the object considered, or if we cannot do this, we at least should avoid names which obscure by reminding us of properties of other already known objects, which are not the characteristic or essential properties of our new object. In this instance, speaking of rays we at once are reminded of the rays of the sun-

light, penetrating longitudinally with transverse swingings, and possessing the cardinal properties of reflection, refraction and polarization. But the so-called alpha, beta and gamma rays have nothing in common with the properties just mentioned. The so-called alpha rays are most infinitesimal corpuscles loaded with positive electricity, of most effective ionizing power, moving with a velocity of 10,000 miles a second. They are absorbed within a flight of three inches and they cannot penetrate a sheet of paper. Being charged with positive electricity they will be attracted by the negative (south) pole of the magnet. They have no transverse swingings, and they cannot be reflected, refracted or polarized. I suggested that this ray be called alpha particle, and for its writing sign I suggested an alpha with a plus sign after and above it. The advantage of writing it in such a manner becomes evident at a glance, if I mention to you that this alpha plus particle may lose its positive charge of electricity and therefore become a simple alpha, then it is already a transmutation body of the former alpha plus, it is no more subject to further transmutation, because it is deprived of its life, it is a dead body and absolutely identical with the atom which we find in the spectrum of the sun, and which is known as helium, and if you require a writing sign for helium it should be a simple alpha. The atomic weight of helium is 4. The alpha particles are identical with the canal or Goldstein rays of the Crookes tube.

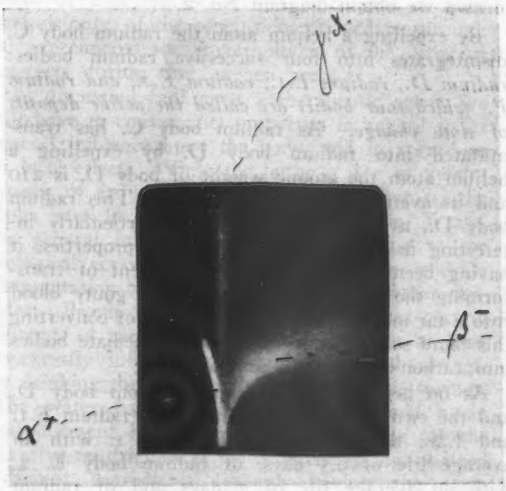
Neither have the so-called beta rays anything in common with the properties of the sunlight rays. They cannot be reflected, refracted or polarized. They are a stream of negatively charged electrons having no mass or weight. They are attracted by the positive (north) pole of the magnet, and their velocity is about 300,000 Klm. or 36,000 miles to the second. Their power of penetration is about 100 times greater than that of the alpha particles, and they will penetrate aluminum 0.5 cm. These so-called beta rays are in all their specific properties identical with the kathode rays of the Crookes tube, although the velocity of the latter is only 1000-2000 miles a second. I therefore suggest that these so-called beta rays be named beta kathode electrons, to indicate their kathode ray nature, for short: The beta electrons, and their sign in writing should be a beta with a minus sign after and above. The so-called gamma rays which always accompany the beta electrons are identical with the Roentgen X-rays, but their power of penetration is very much greater than that of the X-rays. The gamma rays will penetrate a plate of iron of one foot thickness. They cannot be reflected, refracted, polarized or influenced by a magnet.

Picture No. 3.

As the name of the X-ray is universally accepted, I would suggest naming these so-called gamma rays gamma X-rays.

Following this suggestion I shall use in this paper the terms: Alpha particles, beta electrons and gamma X-rays.

Returning to the life history of radium let us look at Rutherford's views regarding the transmutation of the radium atom, and in doing so it is best to begin with its oldest known ancestor, namely, uranium. Uranium possesses the greatest atomic weight of all elements, its atomic weight being 238 and its average life 7,500,000,000 years. In the course of disintegration the uranium atom will expel one atom of helium, that we called alpha and which we learned has an atomic weight of 4, and the result of the expulsion of this helium atom is the transmutation of the uranium atom with its atomic weight of 238, into a new body which is called uranium-X, atomic weight 234 average life 32 days. It is claimed that uranium-X does not emit alpha particles, but only beta electrons, but if no helium atom is expelled from uranium-X, the next transmutation body should have the same atomic weight as uranium-X, namely 234. Now there must be one or more intermediate bodies, so far unknown to us, for the next body of the transmutation series known to us has the atomic weight of 230; an unknown intermediate body having expelled an atom of the atomic weight of helium. The transmutation body with atomic weight of 230 has been named ionium by Boltwood. Its average duration of life is so far unknown to us. Since it is accepted that the expulsion of one helium atom will transmutate this body into radium-atomic weight 226—Soddy called ionium the parent of radium. The so-gained transmutation body of radium has an average life of 2500 years and emits alpha particles only. Before proceeding to the offspring of radium itself, I will draw for you the genealogical tree of Rutherford and Soddy, showing the descent of radium, only adding to their original scheme the velocity of the alpha particles of the different transmutation bodies. The scheme is this: Diagram No. 1.



Picture No. 3—Shows the influence of a magneto upon the so-called rays emitted by Radium.

I have added to the Rutherford-Soddy scheme the expulsion of a helium atom from one of the intermediate bodies to explain graphically the atomic weight of 230, possessed by ionium. The

radium atom produces only alpha plus particles, which move with a velocity of 9600 miles per second and by expelling a helium atom (alpha) transmutates into a new body called emanation. As one helium atom was expelled from the radium atom the atomic weight of the emanation must be 226 (radium) minus 4 (helium) equals 222 (emanation). The average life of emanation is 5.3 days and it produces alpha particles only, these having a velocity of 10,400 miles per second. The emanation is a gas belonging to the same group as argon and helium, gases neither capable of absorption by any known reagent, nor possessed of any power of chemical combination, and they are called precious gases (Edelgase). By expelling a helium atom the emanation will form the transmutation body, radium A., which must have an atomic weight of 218, and which has an average life of 4.3 minutes. It produces alpha particles only with a velocity of 11,000 miles per second. By expelling a helium atom this body, radium A., begets the body radium B., with the atomic weight of 214 and a life of 28 minutes. The body radium B. produces weak beta electrons (beta minus) only, and as no helium atom is expelled the atomic weight of the following body in the series of transmutation, namely the body radium C., has the same atomic weight as the body B. namely: 214. Its life is figured out as being 30.5 minutes. *The radium bodies A. B. C. are called the active deposits of rapid change.* The radium body C. produces alpha particles of a velocity of 12,800 miles per second, the greatest velocity of the alpha plus particles we have so far encountered. The body radium C. also sends out strong beta electrons which are always accompanied by gamma X-rays.

In completing the genealogical tree previously drawn we obtain diagram No. 2.

By expelling a helium atom the radium body C. disintegrates into four successive radium bodies: *radium D., radium E.1., radium E.2., and radium F., which four bodies are called the active deposits of slow change.* As radium body C. has transmutated into radium body D. by expelling a helium atom the atomic weight of body D. is 210 and its average life about 17 years. This radium body D., as we shall see later, is particularly interesting in virtue of its therapeutic properties, it having been found capable by Gudzent of transforming the monosodium-urate of the gouty blood into a far more soluble body and then of converting this more soluble body through intermediate bodies into carbon-dioxide and ammonium.

As no helium atom is expelled from body D. and the two following transmutations radium E.1. and E.2., the atomic weights of E. 1. with an average life of 9.5 days, of radium body E. 2. with an average life of 7 days and of radium body F. must be 210. Radium F. is extremely interesting. It is identical with the radio-active body which Mme. Curie separated from the pitchblend before she discovered the radium, and which she called polonium. Its atomic weight as mentioned previously is 210, its average life 203 days, and it emits only alpha particles of a comparatively slow velocity of 10,000 miles per second. As alpha particles are emitted from radium F. the expulsion of a helium atom will bring the atomic weight of the following and last known radium body of the series of disintegration, the radium body G. down to 206, which is also the atomic weight of the element *lead! And as lead is always found to accompany uranium in whatever minerals the latter is discovered, the possibility presents itself, that lead may be the end link, the corpse of the uranium atom.*

We are in a position now to complete the graphic illustrations of the Rutherford-Soddy scheme. Diagram No. 3.

If radium bromide be dissolved in water, three-fourths of the radioactive power of the radium bromide is lost, because the escaping radium body called emanation, which is a gas, carries away three-fourths of the radioactive power, and if you examine this radium solution now as to its contents, you will find alpha particles only, no beta electrons and consequently no gamma X-rays. Now keep this radium bromide solution in a closed bottle in the dark or in the light, in the cold or in the heat, this radium bromide will produce its transmutation bodies, its radioactive power will increase every day and after thirty days this solution will have exactly the same radioactive power as had the radium bromide crystals before you dissolved them. Open your bottle and drive out the emanation by boiling your solution or evaporate all the water by boiling, so that you get back your crystals of radium bromide, and you will find that your radium through this procedure has again lost three-fourths of its radioactive power, and again only emits alpha particles, but after thirty days you will find that your radium bromide has recuperated to its full radioactive power, as if you never had changed its state of aggregation. Add chemicals and acids to it, do with it whatever you please, you never can alter its life, it will in spite of all manipulations constantly produce the same amount of energy through transmutation, losing weight it is true, but to a degree inconceivable to our conception.

You will wonder, how does the radium that has lost three-fourths of its radioactive power by our manipulations, regain its full power in 30 days? If you look through the magnifying glass of this little instrument, which is called the Spinthariscope, you will see a most wonderful display of scintillating bodies flying around like shooting stars. The display you see here is nothing else but alpha particles bombarding a little screen covered with zinc-sulphite. These alpha particles are shot out from the point of a needle that has been dipped in a radium solution and has been fixed about one-fourth to one-half cm. distance in front of the zinc-sulphite screen. Every time an alpha particle hits a zinc-sulphite crystal, the latter explodes and these explosions are the light effects which you see. You will readily understand that this display will come to a standstill as soon as all these zinc-sulphite crystals have been used up by the explosions, but if you replace the worn out screen by a new one the display will

go on till the new screen is worn out and so on for 2500 years. You can appreciate how small a quantity of radium is used in this little instrument, when I tell you that a sixtieth of a grain—one milligram—of radium, has been dissolved in probably a pint of water and the point of this needle has been only dipped into this extremely weak solution. And what you see here is practically the key to the understanding of radioactivity. What is happening here, the bombardment of the screen with alpha particles sent out by the radium, takes place in every atom of the radium, on the surface just as well as in the inner parts, no matter whether the radium is in solution or in solid form. Now we have heard that the penetration power of the alpha particles is a very limited one, it will not penetrate through a sheet of paper, or through three inches of air. It is plain therefore, that only alpha particles emitted from radium atoms of the surface can find a free outlet, and that any alpha particles emitted from the atoms of the interior of the solution or solid body will be held back and being radioactive and held back are a source of energy which increase the radioactive power of the specimen. If I now dissolve a quantity of radium bromide in water I set free these imprisoned alpha particles, hence the sudden drop in the radioactive power of the solution, and on the other hand by closing the bottle again and thus retaining in the interior of the solution the alpha particles the gradual restoration of the full radioactive power occurs in 30 days. This property possessed by radium of regaining its full radioactive power is a property of all radioactive elements and is the fundamental law of the conservation of radioactivity. Besides the principal properties of the alpha particles mentioned before, I have to make you familiar with another most important property of the radioactive elements, which again is most closely connected with the alpha particles.

Figure No. 1.

You will have noticed on the photographic plate where the piece of pitchblend photographed itself beside the wire clamps which were placed between the pitchblend and the photographic plate, two broad bands on the plate, which are photographs of two strips of zinc-oxide plaster, with which I bound the pitchblend to the plate, to steady my object. In spite of being pasted above the pitchblend, and in spite of being a substance, which rays would penetrate so easily as to give you a good picture on the plate, even if they had been placed between the pitchbled and the plate, you see here quite distinctly a photographic reproduction of the two strips. Now what happened in this instance is this: The alpha particles emitted from the radioactive pitchblend hitting this zinc-oxide plaster covered it with a deposit of probably millions of alpha particles with all their radioactive properties, and these have produced under conditions previously mentioned exactly the same beta electrons and gamma X-rays, as any radioactive element would under the same conditions. The alpha particles as you know could not have penetrated the two layers of paper the plate was wrapped in, so it could never have effected the plate, therefore it must have been the effect of the beta electrons or gamma X-rays. These deposits will occur on any bodies within reach of alpha particles, and as the emanation gas, which as you know has an average life of 5.3 days and has a wider field for its flight than alpha particles, which are absorbed within three inches, and as the emanation as you know, emits again alpha particles, you can understand that I can effect deposits of alpha particles on all the walls, floor, ceiling and furniture of a big room, if I only have a sufficient amount of radium and the necessary time at my command; and this deposit will be radioactive. We therefore speak of radioactive deposits. If I now remove the spreading source, the radioactivity of this room will grow weaker and weaker by the dying off of the different radioactive transmutation bodies. Whilst the radioactivity of radium is a constant one, the radioactivity of this room must be a limited one, since it is induced by radioactive deposits of limited life.

If I chose for an experiment a quart of water and lead into the water radium emanation, I can make the water radioactive, strong or weak, just according to the quantity of emanation I let in, it now possessing all the properties of radioactivity, but for a limited time only since emanation loses its life in 5.3 days, but if I dissolve a particle of radium with a life of 2500 years in the quart of water the solution will remain radioactive for that number of years.

Having knowledge of the varied properties of radium and its different transmutation bodies, experimenters studied their stimulating and destructive effects on the lower and higher animals. They then applied them to human beings, traced their effects step by step through thousands and thousands of experiments, and I will give a brief synopsis only, of the conclusions arrived at through the experiments and investigations of the different scientists during the last ten years.

In discussing radium as a therapeutic agent, we will have to consider its properties in regard to its general influence upon the body, and in regard to its local effect. While the latter is due to the influence of its emitted so-called rays, that is, the alpha particles, beta electrons and gamma X-rays, the general influence on the body is due to the biological action of the radium emanation and its disintegration bodies, and this we will further consider. People have accepted for years that certain ailments of the human body are cured or at least beneficially influenced by certain natural springs, by drinking the water or by bathing in the springs. The water has been examined again and again and different ingredients made responsible for the curative results, but as the different springs showed different ingredients, though having the same curative reputation, no conception of a specific curative agent was possible. Furthermore, it was found that these waters bottled at the springs and shipped to the patients' homes, never had the effective value that they had at the springs, although the chemical ingredients had not changed and the waters were heated to their natural temperature. And so the layman, wandering every year to the

springs and finding there relief from his ailment, whilst he found no relief by drinking the same waters at home, formed his own theory, ascribing to supernatural and mystic powers the virtues which otherwise he could not explain. He imagined that there was a mystic power which came out of the springs and cured him; he called this mystic power the "spirit of the springs." He thought that his relief was due to his inhaling the spirit of the springs as it rose out of the water. This belief was the tradition of generations in ancient years and their good common sense told them to hold back the spirit of the springs by building little wooden houses over the spring. They sat in these little wooden houses to inhale the spirit and they got well! These little wooden houses have been torn down by scientists, who could not allow mystic superstition to interfere with their highly scientific way of using the waters for treatment! But during the last six months two beautiful pavilions have been erected and opened for the public, one over the spring at Teplitz, at the cost of 60,000 crowns, the other over the spring in Wiesbaden, at the cost of 60,000 marks, with the purpose of leading the spirit of the springs into the pavilions, and hundreds of sick people sit there for hours every day inhaling the very same spirit of the springs as people did hundreds of years before them, but the name of the spirit has been changed! For what these people inhale in these pavilions is called to-day radium emanation. It may be stated here that emanation is considered, if not the only, at least the most effective curative medium of the springs, and that the effective value of the water depends upon its degree of radioactivity. As it would have been a hard test to have proven the curative value of the emanation by separating it from the other spring ingredients, experiments were made by different scientists to produce artificial radioactive waters and to compare the curative results gained from these artificial waters with those of the natural thermal springs, and they found results equal and even better than those brought about by the springs.

The credit of investigating the effect of emanation treatment is undoubtedly due to S. Lowenthal, who in 1906 in a series of scientific and systematic investigations showed the influence of emanation upon the healthy and sick. He was able to show that the introduction of ten and fifteen thousand volt units of emanation into the body of a healthy person, had no effect whatever, neither subjectively nor objectively. Quite different, however, was the reaction in twelve cases of chronic rheumatism, eleven of which after drinking eleven to fifteen thousand volt units of radium water for one or two days experienced a swelling and increased pain, not only in the joints affected at the time, but also in the joints involved in former attacks, a reaction similar to the so-called "reaction" which the rheumatics experienced at the springs, a reaction which was always considered by the layman, as well as the physician a very favorable sign of a probable cure. Other investigations of Lowenthal in numerous cases have shown decided cures and improvements with or without reaction.

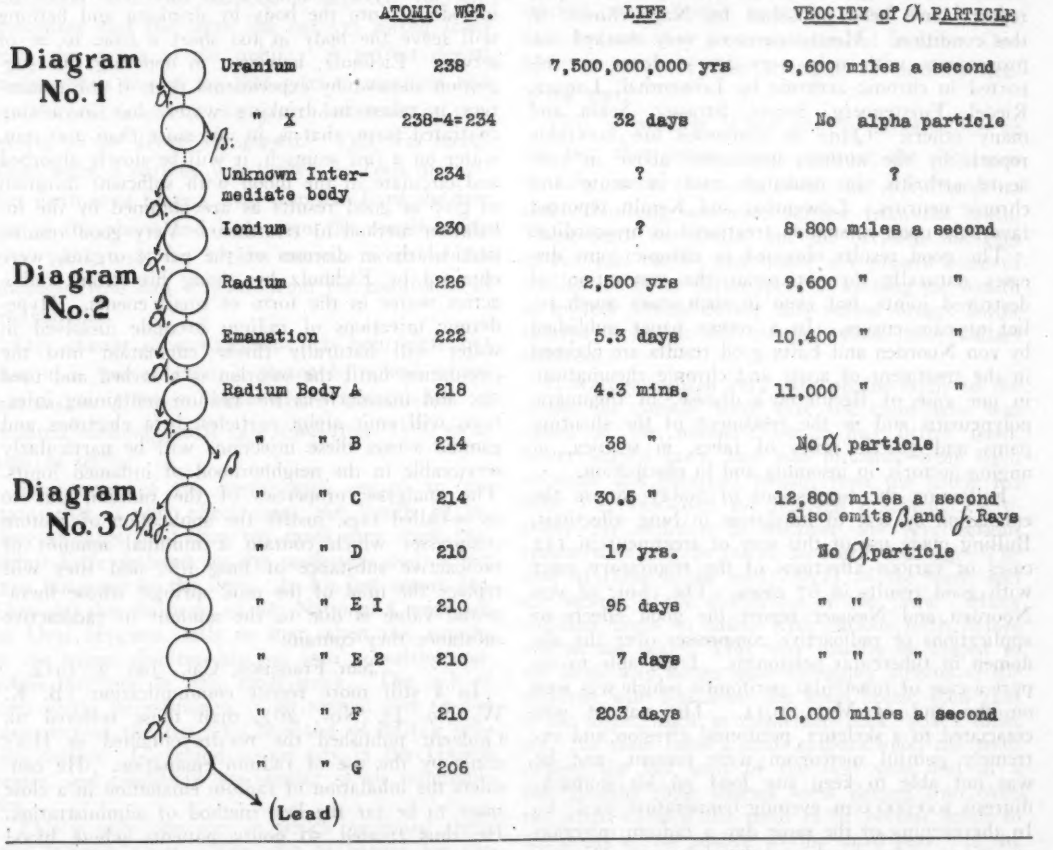
On the ground of these experiences of Lowenthal the emanation treatment has been taken up universally in Germany and Austria, by the clinics and specialists for different diseases, and the following conclusion has been arrived at and enunciated by Paul Wichman. Cures or marked improvements by administering radium emanation, by inhaling, drinking, bathing, and by the use of radium compresses have been seen in the following affections: Chronic rheumatism of joints and muscles, chronic neuritis, neuralgia, shooting pains of tabes, chronic catarrh of the different parts of the body, sluggish chronic effusions, gout, certain female troubles as endo- para- and perimetritis of the actue or subacute forms. Accepting his statement, two most important questions require consideration: First, what are the possible properties of the emanation which bring about the cures of these morbid conditions? Second, as results have been obtained by compresses, drinking of radium water, bathing in the water, by the inhalation of emanation, which of these modifications is therapeutically the most effective?

Regarding the curative properties of the emanation many speculations presented themselves as to the possibility of bactericidal action, of a transformation of lecithin, of a direct alteration of toxins, of a production of H_2O_2 out of the waters of the tissues; but all these theories have been rendered improbable as far as the emanation is concerned. A very important step in the series of investigations was taken by Bergell and Bickel. These authors studied the influence of the emanation upon the ferments and found that the inhibiting influence of salt solution upon pepsin and pancreatin action was negatived by the adding of emanation, in other words, that the emanation had actually actuated the ferments. Since by systematic investigations Löwenthal in co-operation with Wohlgemuth and Edelstein proved also the actuation of the autolytic and diastatic ferments, it has been accepted, that the biological action of the emanation and its disintegration bodies consist in an actuation of metabolic as well as of autolytic ferments. The great importance of autolytic stimulations is apparent in all conditions where morbid deposits have to be carried away.

The importance of the stimulation of metabolic ferments becomes great in those instances in which insufficiency of these ferments result in disturbances of metabolism. As gout is the best studied disease of metabolism, and investigators have added much to the understanding of the true nature of the disease, it will be readily understood that gout was chosen as the metabolic disease on which to try the therapeutic effects of emanation, with, I am glad to say, the happiest results. According to the investigations of Brugsh and Schittenhelm we accept as proven to-day, that gout is a disease of metabolism, brought about by a disturbance of the entire system of the ferments of the purinmetabolism, and this in such a way, that formation of the uric acid is delayed, as well as its further splitting up and its elimination. This leads to a

continuous accumulation of uric acid in the blood, a condition called urikamia.

Through the work of Gudzent we know to-day that uric acid can circulate in the blood as a salt only, indeed as monosodium-urate, and that this monosodium-urate exists in two isomeric forms; the lactam-urate, which is formed first, is more soluble but unstable and changes into the isomer; the lactim-urate, which is stable, but less soluble. The solubility of the lactam-urate is 18.4 mlgr. in 100 cm. serum according to Gudzent, while the solubility of the lactim-urate is 8.3 mlgr. only. It was found that as the monosodium-urate in gout circulated in the blood as the stable but very much less soluble lactim-urate, at times



to six weeks and in twenty-two out of these twenty-five cases the monosodium-urate had disappeared from the blood, in two cases tophi had disappeared altogether, and in other cases had grown decidedly smaller. Equally good results in gout with r. emanation by inhalation, drinking or bathing were reported at the last Balneological Congress in Berlin March 3rd to March 6th, 1911, by Furstenburg, Eichholz, Löwenthal, Kionke and Lackman. I have had a splendid opportunity to observe the results of the emanation treatment in gout and rheumatic affections at His's clinic in Berlin and Löwenthal's emanatorium in Brunswick. In three gouty cases in His's clinic I saw the onset of an acute paroxysm of gout during the session in the blood becomes supersaturated with the uric acid. By means of systematic experiments in a test tube, Gudzent found that one of the disintegration bodies of the radium emanation, the radium body D. will either retard the formation of the more insoluble isomer or transform the lactim-urate into a by far more easily soluble body, which later will finally be burned to carbondioxide and ammonium.

The test tube experiment was then transferred to actual test on gouty men, and emanation treatment by way of inhalation in the emanatorium was used on twenty-five gouty patients, their blood examined before the treatment showing the presence of M. S. U. The blood again was examined for M. S. U. after emanation treatment from three the emanatorium. The paroxysms were promptly broken by atophan (phenylchinolin-carbonacid), which is given in a dosage of 0.5 to 1 gram four times a day with large quantities of water and bicarbonate of sodium, the latter being added to prevent renal colics by the rapidly excreted uric acid. As this reaction is not infrequent it would be wise to inform patients of a possible occurrence in the beginning of the treatment.

In a paper on gout read before the Anglo-American Medical Society in Berlin in June, 1911, P. F. Richter, one of the leading authorities on diseases of metabolism is Europe, after dwelling upon the treatment of gout, closed his address with the following sentence: "While in former

years we were not able to give our gouty patients any hopes as to a positive cure, we can safely today, after the introduction of the radium emanation treatment, assure our patients that gout ranks in the class of curable diseases." Very encouraging results have also been obtained by different clinicians in the treatment of the various acute and chronic rheumatic troubles of the joints, muscles and nerves. Very satisfactory results with few failures only, are reported in sciatica by Davidsohn, Fürstenberg, Gottlieb, Frankel, Kohlrausch and Mayer, Strasser and Selka and many others. Strasser and Selka, Gottlieb and Stern also report a favorable influence on the shooting pains of tabes. While Laquer and von Noorden do not obtain results in acute gonorrheal arthritis, quite favorable reports have been published by Nagelschmidt in this condition. Mostly cures or very marked improvements with only very few failures are reported in chronic arthritis by Löwenthal, Laquer, Riedel, Furstenberg, Somer, Strasser, Sekla and many others. Quite as numerous are favorable reports by the authors mentioned above in subacute arthritis, in neuralgia and in acute and chronic neuritis. Löwenthal and Kemln reported favorably upon emanation treatment in myocarditis.

The good results obtained in chronic joint diseases naturally do not mean the restoration of destroyed joints, but even in such cases much relief of pain ensues. In a recent paper published by von Noorden and Falta good results are claimed in the treatment of acute and chronic rheumatism, in one case of Bechterew's disease, in rheumatic polyneuritis and in the treatment of the shooting pains and gastric crises of tabes, in sciatica, in angina pectoris, in insomnia and in obstipation.

Following the suggestions of Soddy to use the emanation by way of inhalation in lung affections, Bulling made use of this way of treatment in 112 cases of various affections of the respiratory tract with good results in 67 cases. The clinic of von Noorden and Neusser report the good effects of applications of radioactive compresses over the abdomen in tubercular peritonitis. I am able to report a case of tubercular peritonitis which was seen on the 2nd of May, 1911. The patient was emaciated to a skeleton, peritoneal effusion and extremely painful meteorism were present, and he was not able to keep any food on his stomach, diuresis 500-600 ccm. evening temperature 39.5° C. In the evening of the same day a radium injection was given under the skin of the abdomen. Diuresis on May 3rd was 1000 ccm.; patient could retain some food; evening temperature 37.2; patient more comfortable. On May 4th diuresis 1800 ccm.; patient ate better and could retain all of his food. Evening temperature 37.3°. Radium drinking water was added to the injection. After giving the boy the second injection on the evening of May 4th, I left him in the hands of his attending physician, receiving weekly reports of his progress. The last report, received on July 23rd, showed a gain in weight of 15 klgr., about 32 lbs., the boy was well and walking every forenoon and afternoon for one hour.

As to the question of the best way of administering the radium emanation, either by drinking or bathing, or by inhaling the emanation gas in closed quarters—opinions are widely divided. The most important factor, is according to Löwenthal and Gudzent, to keep the emanation circulating in the blood as long as possible. Blood examination by Gudzent on patients in the emanatorium have shown that after inhaling the emanation gas for one-quarter of an hour only, the amount of emanation to the litre of blood was equal to the proportion of emanation in a litre of air in the emanatorium, and that after three hours of inhaling in the emanatorium the blood contained seven times this amount. The emanation circulating in the blood leaves the body in the expired air, and Löwenthal and Gudzent claim that the emanation introduced into the body by drinking and bathing will leave the body in too short a time to be of service. Eichholz, however, in opposing this suggestion showed by experiments that, if the emanation is taken in drinking water, but in a concentrated form, that is, in not more than 200 ccm. water on a *full* stomach, it will be slowly absorbed and circulate in the blood with sufficient duration to give as good results as are obtained by the inhalation method of treatment. Very good results, particularly in diseases of the pelvic organs, were obtained by Eichholz by giving his strong radioactive water in the form of small enema. Hypodermic injections of radium bromide dissolved in water will naturally throw emanation into the circulation until the solution is absorbed and used up; and inasmuch as the radium containing injections will emit alpha particles, beta electrons and gamma x-rays these injections will be particularly serviceable in the neighborhood of inflamed joints. The analgesic properties of the radium, due to its so-called rays, justify the application of radium compresses which contain a minimal amount of radioactive substance of long life, and they will replace the mud of the mud springs, whose therapeutic value is due to the amount of radioactive substance they contain.

San Francisco, Cal., Jan. 3, 1912.

In a still more recent communication (B. K. W. No. 47, Nov. 20), than those referred to, Gudzent published the results obtained in His's clinic by the use of radium emanation. He considers the inhalation of radium emanation in a close space to be far the best method of administration. He thus treated 50 gouty patients whose blood showed previous to treatment from 6-13.7 mg. monosodium-urate to 100 ccm. of blood. After 24 sittings in the emanatorium the blood of thirty-two of the fifty patients was free of uric acid, and after thirty-six seances the blood of five more became uric acid free.

Further Gudzent whilst drawing attention to the poor results obtained by the commonly used methods in the treatment of arthritis in children claims marked good results from the radium inhalation in the emanatorium; on the other hand joint diseases occurring in aged people showed no improvement. Gudzent finds contrary to von Noorden and Falta, that patients with acute rheumatic fever are not favorably influenced by this form of treatment, but

chronic affections of the joints, muscles and fibrous tissues are greatly benefited except those of tubercular and luetic origin.

Repeatedly has he obtained good results in the treatment of acute chronic gonorrheal arthritis by a combination of inhalation treatment with the injection of radium solution around the affected joints.

THE ECONOMIC VALUE OF THE DECIDUOUS TEETH.*

By M. EVANGELINE JORDON, D. D. S., Los Angeles.

The environment of the American people has entirely changed within the life time of one generation and the connection between the environment and the teeth has not yet forced itself upon the minds of the public. A perfect dental equipment is one of the best gifts to mankind and environment is one of the great destroyers or preservers of the dental equipment. This was recognized when a parallel was drawn between the perfect denture of Sitting Bull who had lived the free life of the plains and had eaten the simple primitive food, and the broken carious teeth of his grandson who had suffered from the conditions of civilization.

Our change of environment has been slow but that it is just as fatal is shown by school examinations in different cities where the number of children needing dental care runs from 75% to as high as 97%.

The value of the teeth with regard to the state, that is, the effect upon the health of society at large and upon the taxes they must pay, is but little realized by the profession and is not even imagined by the laity. In his last report Dr. Ebersole, the chairman of the National Committee on Oral Hygiene, tells us that when the mouths of the school children are put into a healthy condition they can do 20% more work. The lack of such work, he estimates, is an annual loss to the taxpayers of the city of Cleveland of half a million dollars. Cleveland is one city in the United States, and conditions are similar in all communities.

This is only one way in which neglected teeth may increase taxes. The cost of caring for the young criminals might be greatly lessened by keeping the mouths of the poor children in a healthy condition. We should then have fewer young criminals because workers in juvenile courts find carious teeth one of the predisposing causes of viciousness and delinquency. Often these children become honest and upright when their mouths are made healthy. A step farther and the cost of maintaining prisons, courts, and penitentiaries would be lessened if there were fewer criminals growing up to fill them.

Hospitals are a great expense. Those who work in clinics for tuberculous children tell us that such children always have carious teeth. Go into any hospital and examine the mouths of the inmates and you will be satisfied that if their teeth had been kept in repair many of them would not need to be there.

Another heavy item of expense to the taxpayer is in maintaining asylums for the insane which each year are being more crowded. Some of the unhappy people would be well and self supporting if their teeth had been cared for, but now they are a tax upon the people.

And last but saddest of all, when old age is reached many people must be cared for by the state because they were unsuccessful in life. One fifth, or more, of their strength was lost by neglected teeth.

This is needless waste and is largely due to the fact that people think because the deciduous or baby teeth are to be shed that they need no care. Nothing was ever farther from the truth. These teeth are needed for use between the ages of two and twelve and under our present state of civilization every dollar spent in keeping the mouth in perfect health during this period brings better returns in health and strength than three dollars later on.

It was recognized very early in the study of the causes for carious teeth that the child who was raised at the mother's breast had better teeth, better shaped jaws, and was probably freer from adenoids and enlarged tonsils, than the bottle fed baby. It remained for dentists practicing exclusively for children to discover the very serious results that may be traced to bottle feeding. The first of these is the early decay of the teeth and the second is the deforming of the jaws. Many children begin to suffer with carious teeth before the second year. This may usually be traced to the lactic acid action upon the upper incisors of the children who had been fed upon bottle food that is too sweet, such as condensed milk, goat's milk, etc. In these cases a stain appears upon the teeth during the last part of the first year and in a few months these stained areas deepen into cavities often causing the teeth to be broken down to the gums by the middle of the third year. If the child has care the abscess which follows the growth of the cavity and the death of the pulp may be treated and the tooth filled and restored to usefulness.

My records show many such cases of children ranging from eighteen months to two and one half years of age. Each of these children needed besides such treatments several small fillings in other teeth which if neglected would have gone through the same destructive stages of inflammation of the bacteria invaded pulp, its death and suppuration, and later alveolar abscess, followed by a necrosed area of the alveolar process surrounding the root.

* Read at a joint session of the Los Angeles County Medical Association and the Los Angeles County Dental Association.

Possibly the busy physicians have overlooked these apparently little trifles without realizing how prevalent and how serious are the dead pulps in children's teeth. An abscess upon the finger is a serious thing but how much more serious it would be considered if its discharge were all carried into the system. Where there is one tooth with an abscess another will soon be in the same condition because mastication upon the approximal and occluding teeth becomes difficult and painful and the destructive bacteria burrow toward the pulps of these teeth with less disturbance from the food.

The blood is laden with pus germs absorbed directly by the tissues surrounding the roots of the teeth and also by the way of the stomach and intestines because the slightest pressure upon the tooth squeezes great drops of creamy pus into the food being prepared for digestion. Each tooth with an abscess reduces the resisting power of the child until when there are five or six or even seven, as one of my little patients of three and one-half years had, great quantities of pus are absorbed daily and very little resistance is made against the poisoning. Many a little grave, yes thousands of little graves hide the victims of septicemia, although the child appeared to succumb to some simple ailment.

The little patient suffering with seven abscesses was brought from a neighboring town and referred to me because the dentists who had examined her found her extreme irritability a hindrance in doing satisfactory work for her relief. In six weeks her teeth were filled, but for several months pus would reappear at some point of the necrosed areas about the roots. These all finally healed and at a recent visit after a year's absence her gums were perfectly healthy and her teeth all in service. A year and a half ago she passed through a serious run of typhoid fever where her physicians say she could not have escaped death had her mouth not been in a perfectly healthy condition.

Generally conditions of this sort are brought to the attention of the physicians first and if they do not recognize them the blame should rest at their door. Some do recognize the danger from the pus and extract the tooth, or teeth, without recognizing the injury they may be doing to the proper occlusion of the permanent set. Never extract a deciduous tooth except for its immediate successor is an axiom in dentistry, and should prevent the early sacrifice of these teeth which may easily be restored to health and usefulness by a few simple treatments.

The prolonged use of the nursing bottle causes the upper arch to grow high and narrow which results in a permanent lengthening of the face and malocclusion of the arches. The upper front teeth may project and prevent the closing of the mouth. In such cases the child may breathe through the mouth and is then subject to inflammation of throat and tonsils. The air passages of the nose become smaller and the growth of adenoids is induced. If the upper teeth are broken off very early the lower jaw, having no support, may sag forward and remain in the protruding position.

Where artificial feeding cannot be avoided the watchfulness of the mother may do much in the prevention of these troubles. The nose must be kept clean so that there is no obstruction to free breathing. The bottle must be taken from the child as soon as empty and pacifiers must never be used. The mouth must be kept very clean, and as soon as the teeth appear they must be kept free from stain. If the food is sweet, magnesia helps to counteract the acid, and to keep the stomach more healthy.

The deciduous teeth are for use during the time of greatest development of the child, and the shortest lived of these, the incisors, should last for six years. The molars which are replaced by the bicuspids should be in use for eight and ten years and any interference with the usefulness of these teeth interferes with the nutrition and growth of the child. It may not always show in the physical appearance but it always interferes with the nervous system. Children whose teeth have been badly neglected are frequently the victims of a serious breakdown which often becomes most apparent as they approach puberty.

Dentistry like education should be begun in childhood. If prophylactic work is begun before any stains appear upon the teeth and is carried along without interruption there is every reason to believe that there never will be even a roughening of the enamel of a single tooth. The exception to this rule is where the child is a victim of severe malnutrition due to some extreme febrile disorder as the result of scarlet fever, diphtheria, measles, etc., or syphilis, in which case the growth of the teeth may be stopped during the development of the enamel and result in atrophied teeth, those misshapen stunted teeth, so difficult to preserve and so much less useful because of the small surface of occlusion.

The first permanent molar is most often the victim of atorphy and may generally be traced to such a disturbance occurring between birth and the third year. The preservation of the first permanent molar is one of the great problems in dentistry. Erupting in the sixth year it is generally mistaken by the laity for a deciduous tooth. When the mouth is full of caries this tooth often begins to decay before it is fully erupted. When caries reach the pulp before the tenth year it is almost certain to be lost as the roots are not completely formed until nearly four years after eruption.

One of the greatest mistakes made is to think that this most valuable tooth of the second denture can be permanently filled before puberty. I can safely say that fully as many teeth are lost, as saved, when filled with silver amalgam in childhood. Prior to puberty we frequently find an acid saliva depositing the destructive coating of mucus upon the teeth similar to the conditions during the early months of pregnancy. Then the bacteria penetrate between the wall of the filling and the tooth and protected by the filling develop great colonies which undermine the tooth and penetrate the pulp while externally there is no sign until the whole tooth suddenly falls to

pieces like the collapse of a building with a weak foundation.

The teeth like the forests and rivers of the nation are one of our greatest natural resources and should be understood and conserved with equal care, as much of the health and happiness of the nation depends upon their usefulness. Their conservation is one of the simplest and easiest matters when faithfully continued from babyhood to adult life.

Then all fear of dental work is unknown because if as the result of an illness some small cavities do form they are filled before they become sensitive.

Where prophylatic work is practiced children not only lose all fear of the dentist but look forward to their monthly appointments as a pleasant form of entertainment. Prophylactic work being done once a month a constant supervision is kept of the oral hygiene practiced at home and any mistakes in the use, or lack of use, of the brush can be corrected.

Many pregnant women are allowed to suffer with their teeth when the dental work necessary for their relief would be far less injurious to the development of the child than the sleepless nights of pain which quickly sap a woman's strength.

The poisoning from abscessed teeth or pus pockets about the necks of the teeth very seriously hamper the proper development of the child, and such conditions have been instrumental in causing premature delivery.

Prophylactic work for women during pregnancy when begun in the earlier months is doing much to stop the rapid caries common during that time and prevent the incipient pyorrhea alveolaris to which later the mouth of the mother so often falls a victim.

If the fear and the pain of dentistry can be relegated to the past with other plagues and horrors another step upward will be taken in the progress of science and eugenics.

REPORT OF MASTOID CASES WITH SPECIAL REFERENCE TO DIAGNOSIS.

By J. M. STEPHENS, M. D., San Francisco.

We all meet with cases in which it is difficult to determine the advisability of an immediate operation. Also we have had patients recover without operation, though they showed many symptoms of a severe mastoiditis.

The two cases I wish to report are of interest mainly from the standpoint of age.

Case No. 1. Captain N., 69 years of age; occupation, sailor.

History: Three weeks prior to being seen had an attack of grippe. One week ago had pain in both ears, which increased in severity. A few days later the left ear began to discharge. Patient came to me April 23, 1909.

Physical examination: General condition poor. Patient pale and looked sick.

Ear examination: Left ear had profuse purulent discharge in canal. Membrana tympani: Perforation at lower segment with pus escaping. Mastoid: Tenderness fairly well marked over antrum and extending to the tip.

Right ear: Membrana tympani bulging in posterior superior quadrant. Mastoid tenderness over the antrum. Myringotomy was performed at this time with the escape of sero-purulent fluid. Deafness in both ears pronounced.

The patient was next seen May 19th, about three and a half weeks later, having been attended in the meantime by his general physician. Shortly after entering the hospital he had facial erysipelas, but at this time there was very little evidence of the rash.

Physical examination: Temperature 99.5° F. Pulse normal. The ears on examination presented very similar conditions: a profuse, thick, purulent discharge coming from the external meati and also from the perforations.

On the left side the membrana tympani was macerated, and there was some prolapse of the superior canal wall. Mastoid tenderness general, but not very acute. Patient could hear only a very loud spoken voice. An examination of aural smears from both sides showed streptococcus infection. Blood count showed a slight increase in the leukocytes, otherwise normal.

Two days later, May 21st, both mastoids were operated upon. On the left side the process was very extensively involved; bone pneumatic and all cells filled with pus and granulations. There was a peri-sinous abscess at knee, involving it for about one-half inch. Here the granulations were quite healthy in appearance, so they were left untouched. There was also an area of bone about three-fourths of an inch in diameter over the middle fossa which was found to be necrotic and removed, exposing the dura at this point. The dura appeared to be somewhat inflamed, though otherwise healthy. There was a thorough exenteration of all the cells done, and the wound packed with gauze.

The right side was also very extensively affected, all the cells being filled with pus and granulations. There was no exposure of dura except a small area of the limb of the sinus.

The patient's recovery was uneventful, hearing being practically normal.

Case No. 2. Mrs. W., 75 years of age; first seen April 18, 1908.

History: No previous ear trouble; general health good. Two weeks previous developed pain in left ear. Had been treated by general physician with ear drops and internal medication with no relief of pain.

Physical examination: Patient was unusually well preserved for one of her age. Membrana tympani grayish in color, bulging postero-superiorly; heard watch on contact. No mastoid tenderness elicited. A myringotomy was performed with the escape of a small amount of pus. Patient was sent home and put to bed. Patient was seen daily for one week, hot antiseptic douching of ear having been kept up during this period. The highest temperature recorded was 99° F. The discharge became very profuse and thick, still no mastoid tenderness. Pain in ear continued. Examination of aural smear showed short chained cocci. Blood examination showed no increase in leukocytes.

On May 1st, twelve days after first seeing patient, an operation was performed.

Operation: Usual T shaped incision made and bone exposed. About three-fourths of an inch posterior to the antrum there was a small perforation of the bony cortex, with a small amount of pus just beginning to escape. The cortex was generally removed, showing a large pneumatic process, with cells completely broken down and filled with pus. Post-sinous, tip, zygomatic and bulbar cells all filled with pus. The bone overlying a large part of the sinus was necrotic and very soft. After a thorough exenteration of all diseased cells, wound was packed with iodoform gauze. Recovery was uneventful except for an iodoform rash, which disappeared in four days.

One of the main points of interest in this case, especially after the operative findings, was the absence of mastoid tenderness. This was difficult to understand in a bone so extensively involved and especially with a cortical perforation.

The symptoms of mastoiditis are divided into general and local.

General: Elevation of temperature, headache, loss of appetite, etc.

Local: 1. Pain referred to the mastoid, sometimes radiating down the neck and to the ear.

2. Tenderness over the mastoid region.

3. Redness or edematous swelling.

4. Sagging of the posterior superior canal wall. Narrowing and congestion of the membranous canal.

5. Discharge from the middle ear.

6. Marked deafness.

7. Dullness on percussion is considered of importance by some.

Symptoms of cerebral irritation are considered as complications and will not be discussed; but occurring during the course of the infection, they are a strong indication for immediate operation.

Radiography of the mastoid has been advocated. While this may be of value in the chronic suppurations of the middle ear, it seems of no value in the acute infections, since it is not so much to determine if the mastoid process is involved as it is to decide whether or not the infection will subside without operative interference.

The increase in the polynuclear leukocytes is important when present. However, this is more frequently absent than otherwise. The importance of the specific micro-organism has been the occasion of much discussion, the streptococcus, pneumococcus, pneumo-bacillus and straphylococcus pyogenes being most important or most frequently found. The streptococcus is probably the most virulent. The streptococcus capsulatus has been found to be quite insidious in its invasion and progress. The pneumococcus seems to be very rapid in its invasion, giving rise to acute symptoms: the mastoid tenderness is general and pain severe; the early discharge sero-sanguinious and profuse; yet this is a type of mastoiditis which very frequently subsides without operative interference.

The infective micro-organism is only one factor in the weighing of symptoms, yet frequently it is the deciding element which tips the scales.

Pain in the mastoid region is variable, frequently decreasing and at times disappearing in a progressive mastoiditis. Its importance is dependent on one's ability to eliminate the neuralgic element which is so often found in the course of a grippe infection.

Tenderness: This symptom is probably the most generally depended upon in determining an operative necessity, yet its importance is variable—as shown in one of the cases reported—with a great amount of bone destruction there was no mastoid tenderness, and there are numerous cases of this type. On the contrary, in a case recently seen, the mastoid tenderness was very acute and general, persisting for four days; but from this time on becoming less marked, with a subsidence of the other symptoms; complete recovery occurring in about seven days.

Redness with edematous swelling over the mastoid is usually a late symptom of the disease and demands prompt surgical attention.

Sagging of the posterior superior canal wall seems to be generally considered an absolute indication for operation. Unfortunately, though, it is frequently not advisable to wait for the appearance of this very important symptom.

Quantity and character of the aural discharge is a most valuable symptom; especially is this true of the discharge as it escapes from the perforation in the membrana tympani. A similar symptom is emphasized by Politzer; i. e., the pulsation of the discharge coming from the perforation. He believes if this symptom continues for two weeks, an operation is indicated.

Unfortunately, it is impossible to arrange a group of pathognomic symptoms for every case of mastoiditis; however, there are in the great majority of cases a sufficient number present to enable us to decide upon the proper procedure.

There are some specialists who seem quite radical in that they advocate an operation on practically every case of mastoiditis in which tenderness persists for three days; but this is only one of a group of symptoms, and its importance varies. There are others, so-called conservatives, who wait for symptoms which indicate an extension of the infection beyond the mastoid process, or until the bone is thoroughly broken down. This procedure not only endangers the patient's life, but jeopardizes a successful outcome of the operation.

The true conservative attitude is the intermediate; namely: in those cases where the patient is seen early in the disease it seems advisable to wait a reasonable number of days, even with a persistence of mastoid tenderness, provided the patient's general condition remains good. There is more occasion for prompt surgical attention in those cases seen after the middle ear infection has persisted for some days.

RATIONAL SURGERY OF RETRO-BULBAR NEOPLASMS, WITH REPORT OF A CASE OF CYLINDROMA OF THE ORBIT, EXTIRPATION OF SAME AND PRESERVATION OF THE EYE.*

By P. DE OBARRIO, M. D., San Francisco.

For purposes of description and as a guide of diagnostic value, it is well to divide the orbital cavity into four quadrants or sections and bear in mind the bones forming its boundaries as well as the soft structures contained therein.

In a general way, the upper quadrant or vault of the orbit presents a larger space for the growth and expansion of neoplasms; the external quadrant comes next as to capacity, then the inferior and finally the internal. The nine openings of the orbital pyramid serve as gateways or passages for the transmission of motor, sensory and trophic

* Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, January 23, 1912.

nerves, arteries, veins, lymphatics, etc., to and from the eye and beyond the orbit and its contents to other portions of the face and accessory cavities.

The orbital contents are of such a variety that there are but few tissues not represented, hence it is proper to expect and it actually occurs that every variety of neoplasm has been found and described, both malignant and benign, some relatively frequent, others extremely rare.

From the standpoint of embryology we should expect this also to be true as in fact the orbit and orbital contents develop from the epiblast and mesoblast and all tumors both malignant and benign are the offspring of these embryologic strata, excepting the non-malignant adenomata and the malignant columnar-celled carcinomata which are of the hypoblastic epithelial variety.

Roughly speaking, the field that occupies our attention comprises then a rigid conical-shaped bony container formed by seven cranial bones, lined by a contenious periosteum pierced by nine foramina or channels and lodging the lachrimal gland and adnexa, the ocular muscles, orbital fat and cellular tissues, arteries, veins, nerves, lymphatics, a nerve of special sense and the eye proper which is a world in itself. All of these anatomical structures may and do give rise to neoplasms. In addition we have the metastases from other growths elsewhere, as well as invasions from adjacent cavities. It is easy then to foresee the great variety of simple tumors as well as the perplexing number of compound neoplasms that you may have to take into consideration in attempting a diagnosis. The intricacies of the problem are forcibly brought to one's mind after one has made one or more efforts at diagnosis with its attending surprises, or witnessed the brilliant failures of those with unlimited material and experience at their command. I will abstain then from attempting a specific list of these growths and only mention in a broad general way, that as we have to contend with a rigid container and soft contents, you should likewise expect the presence of hard solid tumors such as osteomata and enchondromata, or semisolid tumors as fibromata, neuromata, lypomata, etc., and liquid or fluid such as angiomata, cysts, etc.

Having thus briefly outlined the possibilities of orbital new-growths, we are to review next the general symptoms that we are to expect from their presence in the orbit.

I catalogue these symptoms as follows:

1st. Exophthalmus.
2nd. Impaired function.
3rd. Presence of visible or palpable tumefaction.

I place the exophthalmus in first place because I do not conceive the existence of a new growth seated at the orbit without the presence of this symptom, although the neoplasm be not visible or palpable or even of small dimensions, for if the orbital contents are increased in size or displaced by its presence, the exophthalmus will always be detected after careful investigation, although at times it may be a difficult matter requiring the use of the ophthalmometer.

The impaired function will be as regards motility and as regards acuity of vision. Regarding motility, it is a well established general principle that it will be diminished or impaired in the direction of the seat of the growth. As regards acuity of vision, it will be diminished in direct proportion to the volume of the neoplasm as well as in direct ratio as to its location whether its greater bulk is situated posterior to the equator of the eye or not; the symptom being most pronounced the more posterior the situation.

In speaking of the seat of the growth it is well to bear in mind that its location in the orbit will be diametrically opposite to the direction of the exophthalmus, and as a logical consequence it is well to divide exophthalmus into the following varieties:

Fig. 1. Aspect of patient before operation.

A.—Vertical, comprising upwards and downwards displacements.
B.—Horizontal, comprising inwards and outwards displacements.
C.—Diagonal, comprising four varieties: upwards and inwards, upwards and outwards, downwards and inwards, and downwards and outwards.
D.—Direct forwards.

Each one of these varieties has a meaning according to the general rule I have laid down above, and by reviewing the anatomical elements that are contained in each of the four quadrants of the orbit, you gather an index as to the possible nature of the new growth.

Following this classification, it is fair to assume for instance, that a forward displacement of the eye with a slight upward and outward deviation is an indication of a tumor of the optic nerve. Likewise, a downward displacement would indicate the presence of a growth at the vault or adjacent tissues; an upward displacement would have a similar significance as regards the lower wall of the orbit. An oblique displacement downwards and inwards would be suggestive of a new growth of the lachrimal gland or adjacent bony wall, whilst a displacement downwards and outwards would be strongly suggestive of frontal sinus involvement in

the shape of an exostosis, for instance; an outward displacement should call your attention to an affection of the ethmoidal sinuses, and a similar reasoning should be properly applied to each one of the varieties I have enumerated above.

I will mention in a passing way, bilateral exophthalmus such as occurs in the exophthalmic goiters, or that consequent on thrombosis of the cavernus sinus; pulsating exophthalmus, and orbital angiomata. Cystic collections must be included, but I omit panophthalmus and such neoplasms as invade the orbit by propagation from within the eye as they are beyond the scope of this work; also emphysema orbitaria or the traumatic hematomata which can not be properly considered.

The means of investigation that we have at our command, in the presence of a given case, are such general and valuable principles as: history, inspection, palpation, percussion, transillumination, focal lighting, fluoroscopy and skiagraphy which should be always employed whenever obtainable as giving information of the greatest value. Another very useful aid is the aspirating needle which should never be forgotten in all such cases in which there is the slightest indication of the presence of fluid, even if after palpation you are impressed with the resistance of the growth, as it happens at times that the liquid is enclosed in a non-elastic container under relatively high pressure. The aid of the ophthalmometer in the doubtful cases of eye protrusion is of such value that it should never be neglected, being an extremely useful and practical procedure.

It is well to follow all these measures in a systematic manner, much in the same way that a physical examination is conducted in any other region of the body in order to ascertain the nature of the case before you or reduce to a minimum your possible failure of diagnosis.

Having arrived now at the question of treatment I will pass in review only such general medical measures as are applicable to gummatous affections, or the electro-therapeutics of the angiomata and of the muscular paralysis which permit of a forward displacement of the eye, and confine myself to surgical interventions proper which is the motive of this work.

In order to use some method in classifying the great number of procedures at our disposal, I will group them into several categories comprising:

A.—Extirpation through soft parts with preservation of the eye.

B.—Extirpation through a bony flap with conservation of the eye.

C.—Extirpation with ocular enucleation.

D.—Excenteration of the orbit, which may be complete, or subconjunctival or plastic.

Of these four modes of procedure I wish to lay particular stress on the first method, that is to say: the extirpation through soft parts with preservation of the eye, as to my mind, in the greater majority of cases one should be able to obtain satisfactory results without resorting to the more radical methods that I have catalogued above. It is my desire to be very emphatic right here, though, to avoid any misinterpretation, and make myself perfectly understood, that at no time would I sacrifice thoroughness to conservatism, but I should always be rational on principle, and eventually as radical as the particulars of every individual case would demand.

I am perfectly convinced, and I furthermore maintain, that in order to enter the orbital cavity once it has been invaded by a neoplasm, and at the same time not injure the eye, and furthermore obtain sufficient space for all practical purposes, that the incision of choice should be at about one to two centimeters from the orbital margin and parallel to it, same to be situated at any section of the circumference, at the point of greatest protrusion.

The next indispensable point is a careful and tactful dissection, whereby one should be led to a point of cleavage in all encapsulated tumors and by following same with a blunt instrument you will find extirpation greatly simplified. The following step is the inspection of the seat of the neoplasm by direct vision and digital palpation whenever practicable. A good many cases of alleged recurrences are due to negligence of this detail.

Fig. 2. Aspect of patient thirty days after operation.

I furthermore insist that the value of this method is based on the fact that in all tumors of the soft parts or of the wall, excepting perhaps those arising from the ocular muscles, or from the optic nerve, the expanding impulses of the growing neoplasm gradually, but most effectively, exert their influence in all directions; but as the osseous container is non-yielding, the soft parts will be displaced towards the point of least resistance, or in other words, forwards as well as diametrically opposite to the point of its attachment. As a direct consequence of this expansion the tumor will dissect its way outwards and meet you half way, so to speak, in your effort to extract him. If such a tumor be not of a decided malignant nature and therefore not invading all structures in its vicinity, there should be no reason to employ any other routes than the ones I have described.

Such growths that are located at or forward of the equator of the eye, make their appearance early at the orbital margin and their recognition and removal is rendered relatively easy.

Beyond the equator of the eye, the digital or

visual recognition of these growths is a matter of greater or less difficulty in inverse proportion to their volume.

In all cases of exophthalmus, the optic nerve will be rendered tense, the muscles will be put upon the stretch together with the ciliary nerves, arteries and veins; the orbital fat will be crowded out of the way as well as the lachrimal gland. All these structures coming under the category of soft tissues, are naturally more or less elastic and yielding, principally under the stress of a slow process, and upon this faculty is based the great advantage whereby the eye may be dislocated to an apparently alarming or dangerous degree in order to suit one's needs in the course of a surgical intervention without harmful results.

This faculty of relaxation of the orbital tissues is present to a superlative degree in the rabbit's eye, as it is possible to dislocate same to the extent of placing the lids behind the globe by merely pulling the eye forward without causing the slightest trouble or reaction. This manœuvre is familiar to all of you who have done any experimental work with these animals.

In entering the orbit through the soft parts, the method of going through the lids only, is adopted by Maisonneuve, Acrel, Halpin and others.

Entering through the conjunctiva without tenotomies but with optical neurectomy, is adopted by Knapp, whilst Rohmer uses the same route but with tenotomies.

The combined method, passing through both the lids and the conjunctiva, is the third way of entering the orbit, and a very satisfactory one according to the nature of the case.

Any one of these methods should be sufficient to accomplish satisfactory results in the great majority of cases.

There are, however, a great number of surgical procedures comprising as a basic principle the formation of a bony flap which I must mention briefly; they involve:

A.—Resection of the superior orbital wall.
B.—The inferior.
C.—The internal.
D.—The external.

I do not wish to go into the details of these operations for fear of lengthening this paper too much, and because the primary intention is to demonstrate how you may extirpate large neoplasms without their need. I will review them, however, very briefly as a matter of system.

The resections of the superior or of the inferior orbital walls have apparently not had a wide range of usefulness, as little mention is made of them in the literature. As regards the resections of the outer and of the inner walls on the contrary, a considerable number of procedures have been adopted or suggested, all of which may have their place in accordance with the nature of special cases that must be judged on their merits.

The principal operation for the removal of the outer orbital wall is that of Kraunlein, which has been modified in several ways. Another procedure is the removal of the maler bone. One of the modifications worthy of mention is that of Lagrange of Bordeaux, which consists in mobilizing the outer orbital wall with the view of dislocating the eye in that same direction after opening the conjunctiva at the inner angle and approaching the orbit through this angle. It is claimed by the author, and it stands to reason, that it gives a very large space to work in.

There are also several procedures for the exposure of the ethmoidal cells and frontal sinus that incidentally open the orbit in an extensive manner unilaterally or bilaterally, such as the operations of Maure, of Gussenbauer, Killian, etc.

The operations of orbital excenteration and enucleation find their place in such extreme cases as urge such radical procedures.

I have already mentioned to you the method I have adopted, consisting in a semi-circular incision at the orbital margin or better removed one or two centimeters from same, to be located at the seat of greatest tumefaction and comprising in one move all the soft parts down to the bone, as an eminently satisfactory way of reaching the orbital cavity. By this procedure it should be possible to extirpate a great majority of growths without further tenotomies but by careful dissection and by gradual dislocation of the globe.

As an illustration of the foregoing statement I have the honor to present to you a report of a case of large cylindroma of the orbit operated upon by me without tenotomies or bony resection or opening the conjunctiva, and preserving the eye in its entirety with all its functions.

The month of August, 1909, there was admitted at Saint Thomas Hospital in the City of Panama, of which institution I was the Director, a patient of Indian extraction, of dark complexion, about 20 years of age, single, and a laborer by occupation. He was directed to my general surgical ward where I saw him next morning.

History: After a general investigation, I could ascertain no specific history nor hereditary data of any consequence.

The patient claims that three years back he received a piece of coal in the left eye and gives the history of a corneal ulcer which healed after a time. This detail is of importance only because of the fact that at about the same time he noticed that the eye began to protrude from the orbit until it had reached the advanced state that he presented then. The growth had been developing, according to this, about three years.

Examination: The right eye was normal.

The left eye presented a very marked exophthalmus with a decided deviation directly downwards in a vertical plane to the extent of about three-quarters of an inch below the level of the right pupil and a very small outward deviation as well.

The upper lid was very prominent but without any inflammatory symptoms and it had the consistency of a lypoma.

The lower lid, on the contrary, was very much crowded and wrinkled. The palpebral conjunctiva was normal.

The bulbar conjunctiva presented a very marked engorgment of its vessels, principally the veins, due to the compression. There was no loss of sensibility in any part of the organ. The cornea, iris, lense and vitrus, normal. The disc was hazy and presented a very marked vaso-dilatation such as you would expect from compression.

O. D. V. 20/20 Emetrope.

O. S. V. 20/40 with a very irregular astigmatism from his corneal opacity as well as from the change of form due to the compression. His sight was, however, most affected from his optic nerve compression.

Motility: His eye was practically fixed in the orbit, permitting only very slight motions in every direction except upwards.

Pupillary reaction to light, convergence, and accommodation was very sluggish. Projection and orientation was correct although sluggish.

On palpation, the whole of the tumefaction of the upper lid was of an even consistency very much like the resistance of a lypoma. At the middle of the upper orbital margin, and rather within the orbit, I could feel a very small projection about the size of the tip of the little finger that was very hard and unyielding. This fact, together with the very pronounced exophthalmus led me to believe that the tumor was of rather large dimensions and located principally posterior to the ocular equator. The exophthalmus was not reducible by manual palpation, neither was there any pulsation to be felt.

A tentative diagnosis was made in the direction of a fibroma or an enchonroma, or an osteoma, or perhaps a lypoma or again some mixed benign form as the patient had no pain and at the time, no inflammatory symptoms.

Treatment: Under general anesthesia and previous the routine surgical preparation, I proceeded to make a large curved incision parallel to the orbital margin and a little separated from same, extending from the inner angle to the outer. This incision extended down to the bone. After careful dissection, I located beyond the orbital margin above, a small encapsulated rounded protrusion which I followed with blunt dissection to the very apex of the orbit. I separated it from the muscles, periosteum and optic nerve, and extracted it in its entirety. As you may imagine by its size, it was necessary to dislocate the eye to an apparently alarming degree. Nevertheless it assumed its normal position. The recovery was uneventful except that upon removing the first dressing in twenty-four hours, I found a considerable edema of the conjunctiva and a somewhat opalescent cornea, which I attributed to faulty circulation through the conjunctival edema, and which cleared up the next day after a few linear scarifications of the conjunctiva.

Macroscopy: The photograph shows a roughly oval-shaped encapsulated tumor almost as large as a hen's egg, measuring 5 cm. in length, 3½ in breadth and 2½ thick. It lay horizontally from before backwards in the orbital vault with its small end forwards and four-fifths of its bulk posterior to the ocular equator. Through a small rent in the capsule I could detect the contents that appeared like colloid granular material with some very small globules resembling epithelial pearls.

Microscopy: The specimen was hardened in formaline and from a wedge-shaped section down to the center, all microtome sections were made. Generally speaking, the tumor presented evidences of active degenerative evolution. The stroma presented a marked myxomatous degeneration towards the surface, whilst in the center no such change was present. The stroma held together a variety of cells or cell groupings represented by the following types: vesicular cells; cellular nests; atypical vesicles; cellular "pearls" and portions of hyaline or colloid material. The cellular nests are formed by large polyhedral cells somewhat similar to a squamo-cellular epithelioma. The center of these nests present evidences of a more or less complete colloid or hyaline degeneration which takes readily the eosine stain, and again at times an opal and orange red tint suggestive of keratinization.

The cellular nests and the "pearls" are frequently surounded by connective tissue and at times by vesicular cells that differ very little in form and size from the nest cells grading off gently towards the stroma cells with which they eventually group by changes of form and stain. The colloid material was to be found also in the center of the atypical vesicles as well as in the nests.

The vesicles were covered by one or more layers of cuboid or flattened cells, which are identical with those of the nests and those forming the greater part of the cellular element of the tumor. With certain frequency these were to be found in the center of colloid material groupings of concentric cells similar to epithelial cells. In one large atypical vesicle was observed a granular coagulated substance with very few red cells but with a considerable amount of desquamated endothelial cells.

Actual size of tumor 5 inches in length, 3½ inches in breadth and 2½ thick.

There was only one fully developed blood vessel to be found.

Taking all this into consideration, it is to be observed that there are three well defined elements in this mixed neoplasm that lead to a diagnosis:

1—The myxomatous degeneration of the stroma.

2—The marked tendency of the cellular element to form cylindrical lymphatic channels which serve as avenues of nutrition.

3—Its endothelial origin.

The fact of having these three distinct elements would justify the title of "Myxo-Linfangio-Endothelioma" which is a cylindroma.

Through the courtesy of Dr. Darling of the Ancon Laboratory, a few sections were submitted to the consideration of Prof. Welch of Johns Hopkins University who was of the opinion "that this tumor had probably originated in an embryological

nest; that it resembles very much such mixed tumors as are observed in the parotid gland; that the glandular element predominates although there are present epithelial cells and myxomatous degeneration."

The functional examination was perfect with the exception of the vision which was 20/50 as was natural to expect due to the optic nerve condition brought about by the tumor compression. The motility, convergence, etc., and esthetic result I believe is unusually good.

After a lapse of two years there has been no relapse and the good result has been uniformly maintained.

Discussion.

Vard H. Hulen, M. D.: I believe the cases of orbital tumors situated posterior to the bulb are very rare, and it is both interesting and instructive to hear such excellent reviews of the subject as that we have just been favored with. In my private practice I have had but one such case in 17 years, and in my opinion this patient would have required a Kroenlein operation. I do not understand Dr. de Obarrio to recommend such an incision as made in his case for all orbital tumors, for I feel sure that a Kroenlein might in some cases be better, in a tumor of the optic nerve for instance. I believe the location and presentation of the growth will very greatly determine the site of the incision. This case that Dr. de Obarrio has so satisfactorily presented to us was an ideal one for the method of removal used, the presentation of the tumor indicated the place for his incision and being encapsulated it was the more easily removed, in spite of its size, by the method chosen than in any other way.

P. de Obarrio, M. D.: It is self-evident that with an incision located at the upper border of the orbit you could not conveniently reach a neoplasm situated at the floor of the orbit, therefore I have insisted very specially in my paper that the curved incision should be at the seat of greatest tumefaction, obtaining in this way a very ready access to the orbit. Dr. Hulen's contention that in such cases where a doubt exists as to the location of the tumor that he thinks it would be necessary to enter the orbit through a bony flap, I may state that I have explained in the course of my paper that any tumor in the orbit will give rise to an exophthalmos no matter how small this tumor may be and that the direction in which this exophthalmos is produced will show by its very nature the location of the tumor. If, however, it should happen that there is any doubt on this question it is a safe procedure to enter the orbit through the external angle, using the same curved incision that I have already described. As to the possibilities of this method of entering into the orbit it seems to me that it has received ample justification by the very nature of the case which it has been my privilege to report to you this evening, as the successful removal of this exceptionally large orbital tumor with such unusual results both functional and cosmetic, I feel certain would not have been possible to obtain through a bony flap, which of necessity would produce more or less deformity. As further evidence of the value of this procedure you will permit me to quote to you Prof. Lagrange's statement in the course of his remarkable work on the subject of orbital tumors, taken from the Proceedings of the French Ophthalmological Society at its twentieth annual meeting. Prof. Lagrange says ". . . it is at the level of the external angle that one should incise the soft parts. In fact there exists at this level a means of access to the orbit that is most remarkable. . . . and the finger may be deeply introduced in the superior external and inferior walls of the orbit. The exploration is even rendered easy when the patient presents a marked exophthalmos which is generally the case for all the orbital tumors and very particularly in the case of tumors of the optic nerve."

I will quote to you now one of the three cases reported by Dr. Rollet, of Lyons, France, in the Transactions of the French Ophthalmological Society for the year 1907. In all of said cases the tumors were extracted through incisions of the soft parts without bone flaps. Dr. Rollet says, "Instead of making an external incision which was successful in my previous case, I preferred in my last one to make a large internal orbitotomy and I was able by this method to remove a sarcoma of the optic nerve. I divided the optic nerve anteriorly behind the eye and posteriorly as far back in the orbit as possible and I extracted this tumor 33 millimeters in length by 17 in breadth."

It is evident then by the further experience of these authors that if by the use of this incision, a ready access may be had to the optic nerve and soft parts beyond, as well as permitting of extensive digital exploration, that its range of usefulness is all that can be desired in the presence of exophthalmos. It is probable that you would not obtain the same result in the cadaver if there is no tumor, as the eye and soft parts have not been previously displaced.

A GENERAL CONSIDERATION OF SOME POINTS OF INTEREST IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.*

By GEORGE D. CULVER, M. D., San Francisco.

Schaudinn and Hoffman's discovery of the spirocheta pallida, Wassermann's application of the complement fixation test to syphilitic serum, and Ehrlich's production of salvarsan are now medical history. It is history of the sort that does not lighten the physician's labor, but does make it more interesting. All these factors are the result of laboratory work, and lead more and more to depending upon laboratory methods in the diagnosis and prognosis of syphilis. Technically speaking, a record may be considered incomplete without finding the spirocheta pallida in the early lesions or without a positive Wassermann finding in either early or late lesions. But practically speaking, the majority of cases that the dermatologist sees do not require either of these for a positive diagnosis.

It is when doubt arises that finding the microorganism or getting a positive Wassermann test is of such great aid and comfort. It is a very satisfactory solution of a doubt to find the specific spirillum in the serum expressed from a sore, either genital or extra-genital. It is not such a difficult thing to find this little corkscrew organism in many of the early lesions, such as the chancre, the roseolar rash, mucous patches or in the papules, as it is frequently present in large numbers, particularly in the serum obtained from moist condylomata. It may be found in the fresh serum with the dark field illumination, or in

* Read before the San Jose Medical Club, December 13, 1911.

stained smears. This serum should be expressed from the deeper portion of the lesion, and should be as free from blood cells as possible. It is more difficult to find the spirocheta pallida in the serum from a lymph nodule. Even when it is expected from the nature of the case and the lesion present that the micro-organism should be easily found and we meet with failure, we should not be led astray by such failure, but should continue to trust in those clinical symptoms that were found to be so valuable before either its discovery or that of the Wassermann reaction. A typical chancre should be taken at its face value, no matter whether the spirocheta pallida is found or not. Furthermore, when the specific micro-organism is found in a lesion of the mouth, it does not mean all that it means when found elsewhere. In the mouth, unless the specimen is taken with every precaution, the spirocheta dentium, which simulates it almost perfectly, and is found in great numbers about the teeth, may cloud the diagnosis. Further back in the mouth or near the tonsils there is less likelihood of meeting this trouble, particularly if the surface is well cleaned with salt solution and curetted, before serum is expressed from the deeper portion of the lesion.

The Wassermann test is more frequently useful to the neurologist, the internest and the surgeon, than to the dermatologist. But many instances occur in our work, in which doubtful lesions are present and in which the spirocheta pallida can not be found. The finding of a positive Wassermann may tightly clinch the diagnosis, and in some cases even when specific treatment has failed to bring about a change.

Two instances exemplifying the value of the Wassermann test came to my attention recently. One was that of an extensive lesion involving the whole tongue of a man over sixty years of age. Clinically the picture was quite distinctly that of an epithelioma, but histologically it was a granuloma. The blood from this patient gave a positive Wassermann reaction that fortified the resolution to give a rigorous antiluetic treatment. The other was that of a young girl without an obtainable venereal or luetic history, who presented a lesion in the roof of the mouth, which, from its appearance, might have been tuberculosis or some other infection. Curiously enough, she had symmetrically enlarged submaxillary and cervical glands, a rare finding in late lues. The lesion on curetting had the consistency of a gumma, and histologically was a granuloma, but finding the positive Wassermann was just the necessary additional proof.

The blood may give a positive Wassermann when the trouble for which the patient consults the physician is not due to syphilis, as many a patient seeking advice for some other trouble has had syphilis in the past, and still has the anti-bodies in his blood. Just here comes a most important point in practice. A Wassermann test of the blood should not be done till after a thorough clinical examination of a patient, lest it color, as when positive it is almost sure to do, the estimate of the clinical findings. Should a patient consult you for some indefinite condition, and you find that his blood gives a positive Wassermann, it would not be right to base your whole diagnosis on that fact. It would be better to look more carefully for the possibility of a coincident condition. Diagnoses based wholly upon laboratory findings are often misleading.

If one is reasonably confident that a luetic condition is present it would be wrong to withhold anti-syphilitic treatment simply because the Wassermann test is negative. In other words the clinical finding is to be preferred to the laboratory finding, especially when the laboratory finding is negative. Not infrequently patients with fairly definite evidence of lues give negative Wassermann tests, both of blood serum and cerebrospinal fluid, but react to specific treatment. An example of this is that of a woman with a serpiginous lues involving the nose and both cheeks, distributed in the area usually involved in lupus erythematosus. Although the Wassermann tests were negative, anti-syphilitic treatment brought about healing in a very few weeks.

It is well to remember that a gumma in the nose or in the naso-pharynx may lead one astray histologically, as sections of the tumor mass may closely resemble sarcoma. Sections from the Schneiderian membrane may even simulate an epithelioma. In the great percentage of cases with tumors so situated, if luetic, the Wassermann reaction of the blood serum will be positive, and even if negative, one will not greatly jeopardize the patient's chances by first resorting to active specific treatment.

It is not necessary in all instances to have the blood tested before giving salvarsan, and it is not fair to determine upon the use of this drug in all cases that give only a positive Wassermann reaction and nothing else. If negative, the reaction may prove nothing, and if positive, though far more important, it should be considered as only one element of proof. Sometimes the blood will not give a positive reaction when the spinal fluid will, and this point is to be considered in doubtful cases.

It must be stated that the more one follows this intricate laboratory test the more help one will gain from it, and the more faith will one have in its reliability. As a control of treatment it is excellent, the best we have, and it proves most when it is continuously negative for months or years after a thorough course of treatment.

The type of case generally seen by the dermatologist is one presenting some visible evidence of disease, and occasionally a combination of other symptoms, including almost anything that may arise as a result of syphilis. It has been customary in my work, and I think will continue to be so, when a patient presents himself for treatment, first to consider the old lines, and unless some definite indication presents for the use of salvarsan, to start with either mercury or kali iodid alone, or

with the two combined, and the method of administration is determined for the individual case.

In early cases mercury alone is generally the weapon of choice. I do not attempt to get away from the rubs, as this is such excellent treatment when it can be carefully carried out. The injection method is as good, and is preferable in some cases. I have found the neutral salicylate of mercury in albolene to be an excellent form for intramuscular injection. One to two grains in a ten per cent. suspension is injected at eight-day intervals into the buttocks. This causes pain, but I have never seen an abscess result, probably because the preparation is slightly antiseptic. Women take it particularly well. I recall two who were persistent in their demands for injections, even when it was time to stop giving mercury. The intravenous use of the bichlorid in normal salt solution is very effective, but it has to be given every second day, which is sometimes an advantage, but not always. When it is necessary to get a quick result, the injection method is, no doubt, the one to be chosen. Other cases react better to mercury by mouth, sometimes yielding best to the mildest forms and small doses, as of gray powder or the bichlorid or protoiodid. One can not limit oneself to any single form, but must aim to fit the patient and the condition.

I have given this consideration to mercury because I believe it is still the drug of choice for a cure, and that salvarsan is pre-eminently a weapon for symptomatic treatment, and as such it takes its place among the marvelous things in medicine. We have occasion to use it in selected cases, ranging from the initial lesion through all of the stages into the latent conditions, which are so numerous as a result of infections with the spirocheta pallida.

It not infrequently happens that a man who has had the disease presents himself for a blood examination, but without showing any stigmata. In such a case, a positive Wassermann alone is not to my mind sufficient justification for the administration of salvarsan. It is justifiable in many cases to administer this drug, but a course of mercury will probably accomplish the result desired without the salvarsan; and if the salvarsan is given I think it should be followed by a course of mercurial treatment.

I have yet to see a case of syphilis, no matter how early the chancre is diagnosed, in which I could feel justified in considering the disease aborted by the use of this remarkable new remedy. If an absolute diagnosis has been made by finding the causative micro-organism, even if it is too early to get a Wassermann reaction, as so frequently happens, I think we are not justified in denying the patient the usual course of mercury. Before the introduction of this wonderful remedy, incontrovertible causes of luetic infection were known to present only the initial lesion, and to have gone through life to some happy or unhappy end without further evidence of the disease. Instances which strengthen this view present themselves constantly. An elevator boy consulted a physician for a sore in the usual location, noticed a few days previously. This was in January, 1911, very early in the use of salvarsan on the coast, when the biggest claims were being made for an absolute cure. He was given a dose of salvarsan subcutaneously below the shoulder blade. The sore disappeared quickly. The dose was repeated in February. In April he was told he was safe; that the disease had been aborted. I saw him first the latter part of May, when he had many mucous patches in his mouth. The instances previously mentioned of a man with an extensive involvement of the tongue that was clinically the picture of an epithelioma, and whose blood showed a positive Wassermann reaction, gave a history of having had the initial lesion, and that alone, thirty-seven years before. He had received three months' treatment, when he was pronounced cured. The disease had been latent for thirty-seven years, and had he died before this year, a record of his case might have been considered as the record of an abortive type, aborted with three months' treatment. We must consider that the same recurrence may happen after the administration of salvarsan, and surely this is less liable to happen if the salvarsan is followed by a good long mercurial treatment.

That the new remedy does not as a rule cause a more rapid disappearance of the secondary evidences of syphilis than does mercury is quite generally admitted. In following parallel cases I have been impressed even more deeply than ever by the marvelous rapidity with which systematic, carefully conducted mercurial rubs will cause the disappearance of all evidence of the disease. We are so apt to forget how wonderful the action of mercury in syphilis really is.

As salvarsan has such a definite effect upon the spirocheta pallida, and causes its rapid disappearance from lesions in which it is easily found, it is important in the treatment of early lues as a sterilizing agent to render the unfortunate less liable to spread the dreaded disease. As an example of what I mean I would cite the case of a young girl in her teens, who recently presented herself with a papular syphilid covering the face and scalp, and confluent on the back and chest, and suffering from severe sore throat. She was a distinct menace to those with whom she came in contact, and could not be trusted to guard against spreading the infection. For this reason she was given 0.60 grams salvarsan intravenously. I believe the best treatment in this case to be mercurial rubs. The effect of the salvarsan was not as rapid as we might have expected from the rubs in the beginninfg, and two weeks after the injection the change in the girl's condition was not marked. Within a few days after beginning rubs, however, the change was much more distinct; her sore throat completely disappeared, showing the rapid effect of the mercury. This use of mercury following salvarsan is preferable to repeating the latter within too short a time.

Prostitutes and other loose characters can be made less of a menace as spirochete carriers by being subjected to salvarsan injections. The interval between the time when this drug is given and the time when mercury is begun should be short; best, in most instances, only a few days.

In such cases as the epidemic of chancres of the

lip recently reported by Shamberg in Philadelphia, in which one young fellow was the source of infection of six girls and one boy, at a kissing party, the use of salvarsan is indicated.[1] The rapid healing effect which salvarsan has upon any syphilitic affection of the mucous membranes will, in just such instances, quickly lessen the danger of spreading the infection.

Too much praise cannot be given Ehrlich's discovery for its effect upon stubborn, resistent, luetic lesions. A palmar syphilid that has for months resisted rubs, injections, mercury and potassium iodid by mouth combined with hygienic and systemic treatment, can be changed for the better within twenty-four hours with one dose of salvarsan intravenously administered. The whole palm or sole may be smooth in a few days, and the patient will think the physician a wonder. It is the drug that is the wonder. Like all other things that come in groups, recently three such cases with involvement of the palm or sole or both, presented themselves, and all healed marvelously quickly after a single injection of salvarsan in each.

Affections of the mucous membranes may be as stubborn as those of the palm or sole, as in one instance within the last few months in which the man gave a history of an infection four years ago. He had had almost continuous treatment, with only short intervals, during the last two years, and interesting to relate, at the end of each interval almost the whole mouth would break out in a monster herpetic eruption, which was almost deadly in its interference with eating, and was with difficulty controlled by mercury. One dose of salvarsan cleared this up almost completely in four days. Improvement occurred in less than twenty-four hours. He has been free since the treatment.

Syphilitic papillomata and cutaneous gummata yield wonderfully kindly to salvarsan, and it is a boon to the patient with malignant syphilis. Many a perforation of the hard palate can be prevented by the use of this remedy.

Contrary to the experience of some who are using salvarsan quite extensively, I have not found it necessary to repeat the dose very many times in any one patient, but it has been necessary to give mercury after the salvarsan. We do not yet know that a cure is possible with one, two, three, or even seven doses, and I think it a serious error to consider it an absolute specific.

A most interesting and instructive lesson will, no doubt, be learned by all of us, that there are some cases which will not yield readily to mercury and kali iodid, and will not yield to the additional use of salvarsan, but will in the end react most pleasingly to mercurial treatment or mixed treatment after the use of this drug. I saw this result from the use of atoxyl before we knew salvarsan, in a patient with chancre of the lip and such severe joint pains that he was confined to bed several weeks. Mercury alone did not relieve him and kali iodid had no effect. After three injections of three grains each of atoxyl he improved rapidly under mercury. Nearly two years later this same man had resistent lesions of the mucous membranes which yielded readily to salvarsan. It would seem that the wonderful tonic effect of the arsenic renders the patient more amenable to the effects of mercury and kali iodid. I firmly believe we are doing a great injustice in not following or attempting to follow this method of procedure before repeating the administration of so intense a remedy, and then should it fail, a second or even a third dose of salvarsan is not only indicated, but is almost obligatory.

I should like to express a thought that has been impressed upon me that we owe it to the patient not to become so enthusiastic about salvarsan, and not to depend so wholly upon it that he will lose his confidence in this remedy. I mean this: the layman has already learned that salvarsan does not always cure, and that it has to be repeated, and he knows that it sometimes fails completely, and just in proportion to what wonderful things he was led at first to expect he will lose faith in the new drug and consider it far less important than it deserves. I speak of this because only recently two patients with conditions that have stubbornly resisted the old line of treatment have objected to the use of salvarsan for these reasons, and one dose in each case would in all probability bring about complete healing. Might we not prevent this loss of confidence in the remedy by the systematic use of the combined specifics?

As a last word, I believe that salvarsan is one of the greatest drugs we have in medicine, and it increases rather than lessens my respect for mercury and iodid of potash. I recall a story told by my colleague, Dr. Douglass W. Montgomery, in reference to kali iodid. Ricord, with some friends, had a box at a theatre in Paris, when one of the noted prima donnas sang. He applauded heartily with the rest, but continued his applause even after the others had stopped. His friends wondered at this and asked him the reason for his enthusiasm. He answered, "My appreciation is not wholly for the fair lady, I am applauding iodid of potash."

[1] An Epidemic of Chancres of the Lip from Kissing, by Jay F. Schamberg, Jour. of A. M. A., Sept. 2, 1911.

AN EXPERIMENTAL STUDY OF A REMARKABLE CASE OF NEPHRITIS WITH EMPYEMA OF THE CRANIAL SINUSES AND MILKY SERUM.

(Contribution to the Literature of Fat Metabolism.)

By CLARENCE QUINAN, M. D., San Francisco.

In the course of a series of experiments upon the blood and urine proteins of a nephritic man, a peculiar lipemia was brought to light. The main facts observed during a biochemical inquiry into this condition are here brought together.

History: M. V., aet. 32, a Russian, by occupation a cook. The family history is negative. His father, mother, six brothers and one sister are living and well. Until about the twentieth year his personal history was uneventful. Prior to that age he enjoyed vigorous health. He has never had any

venereal infection. Some time in his twentieth year there was a purulent discharge from the left ear which entirely diappeared after a radical mastoid operation. Twelve years after this operation, in 1910, he first noticed swelling of the ankles. Rest in bed was ordered, together with a diet of milk, eggs and bread. At the end of three weeks the dropsy showed little improvement and he was advised to enter a hospital. The succeeding four months were spent in three different hospitals. In the first, he received diuretic treatment, and his food consisted of fried ham, or bacon, with eggs and milk three times a day. Elsewhere, he had sweat baths, and milk diets, variously modified, but he lost weight steadily and returned to his home very weak. The dropsy persisted.

He asserts that for a number of years he has been subject to nose-bleed, periodically, especially in warm weather. Since the edema made its appearance, however, the nasal hemorrhages have been more frequent. He has had at times several in the course of a week and, exceptionally, as many as four or five in one day. Occasionally, the bleeding has awakened him at night by giving rise to a tickling sensation in the throat. (It should be stated here that the history of persistent epistaxis was elicited at a time when the experimental work upon this man was far advanced. There never was any evidence of it at the bedside, and as the man had no nurse, and made no complaint of it, the symptom long was unsuspected. The actual loss of blood from this source probably was insignificant, or the condition certainly must have awakened suspicion during his stay in various hospital wards.)

The patient was first seen March 20th, 1911. At that time he was confined to his bed and presented the characteristic picture of chronic parenchymatous nephritis.

Physical examination: He is a man of medium height, broad-shouldered and well-formed, but considerably emaciated. The spinous processes of the vertebrae are very much in evidence and his ribs show plainly. Contrariwise, the face looks quite full, and the lower extremities are swollen and edematous. The skin everywhere has an unhealthy, muddy appearance, which is greatly accentuated by personal uncleanliness and the presence of acne vulgaris. The skin is puffy under the eyes.

All his special senses are normal, and there are no central or peripheral symptoms referable to the cranial nerves. The eye grounds are entirely negative. Behind the left ear is an old trephine opening at the site of the mastoid antrum. There is no discharge from it or the middle ear. The mouth and throat are negative: he has good teeth, the palate is well arched, and the tonsils are not enlarged.

The lungs are normal. The heart is normal in size and position. There is no arrythmia, and the apex impulse is not exaggerated. All the valve sounds are clear. The second aortic sound is perhaps slightly accentuated. The radial pulse rate is eighty, and the vessel wall is soft and easily compressible. The liver and spleen are not enlarged.

There is massive edema of the lower extremities. Sensation everywhere is intact, and the reflexes are normal. The temperature is normal. The blood contains 80% of hemoglobin.

Urine: Specific gravity, 1.014; albumen, 6 parts per mille; no sugar. The sediment contains numerour coarsely granular casts, epithelia cells, etc., and is characteristic of chronic parenchymatous nephritis. The daily volume was about 2500 cubic centimeters.

CHARACTERISTICS OF THE MILKY SERUM

The fresh blood of this individual was not in any way remarkable. It appeared, in fact, to be entirely normal. On standing, however, in a very short time white, milky serum began to separate, and, generally speaking, in the course of an hour it had accumulated in such abundance that nothing whatever could be seen of the clot, and the vessel appeared to contain pure milk. The fresh serum was slightly alkaline in reaction. It showed no tendency to separate into layers on standing, and after several weeks in vitro remained homeogeneous in appearance and uniformly white. It was not affected in the least by ordinary filtration. And it passed without change through a Berkfeld filter. When diluted in the proportion of one to one hundred with distilled water, it formed a strongly opalescent solution. This mixture was remarkably stable. Weak mineral acids and alkalies had no demonstrable effect upon it and various neutral salts brought about no change that could be detected. All attempts to clarify it by means of organic fat solvents, failed utterly. When, on the contrary, the serum, diluted with fifteen parts of water was gently mixed with chloroform, so far from rendering the solution clear this solvent invariably had the reverse effect and augmented the cloudiness. By treating the milky serum as Boggs and Norris suggested, (Jour. Exp. Med., 11, 553, 1909), with an excess of ammonium oxalate crystals, and allowing it to stand 12 hours, ether, previously tried without success, rendered the serum quite clear, but it was invariably noted, also, that after a few hours the serum emitted an intense ammoniacal odor, exactly as would have occurred in an ordinary double decomposition in the presence of a stronger inorganic base.

The diluted serum could always be clarified by filtering out the carbon dioxide globulin group.

METHODS AND TECHNIC.

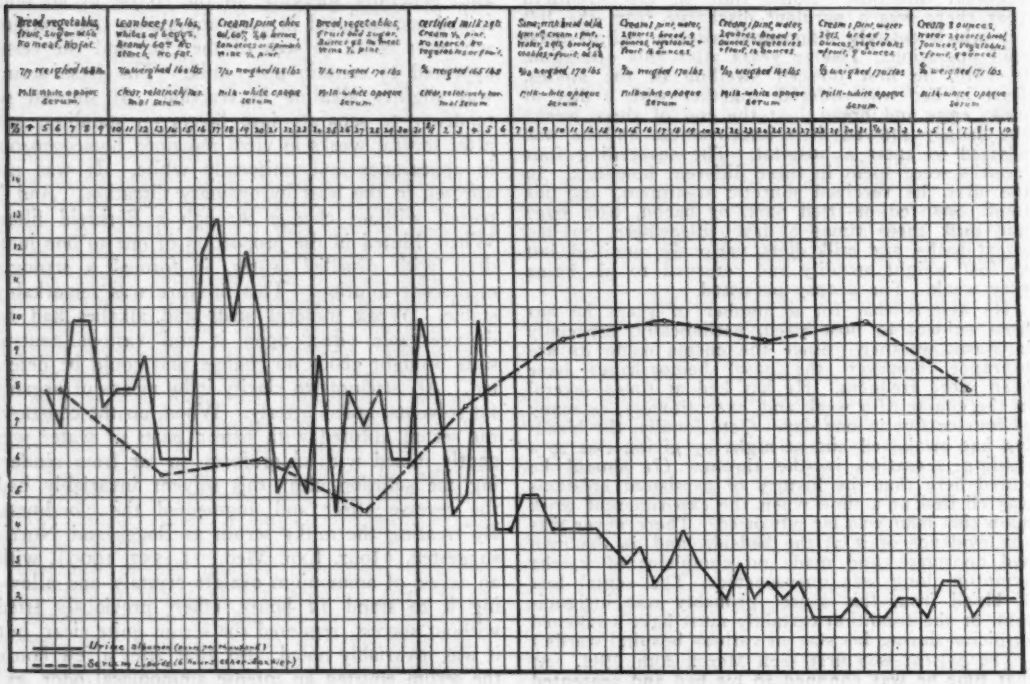
From ten to forty cubic centimeters of blood were taken, as needed, in the usual manner, once or twice a week. The serum was measured with a capillary pipette divided into tenths.

In all direct extractions, one cubic centimeter of serum was used. It is perhaps as well to state that by a direct extraction is meant one in which the serum is dropped into an excess of the solvent Naturally, ether and chloroform cannot be employed for this purpose.

In regular Soxhlet extractions with ether alone, and in serial extractions with the four principal lipoid solvents, ether, chloroform, acetone and absolute alcohol, two cubic centimeters of serum were used.

On the continent, according to the most recent reports, it is the custom to dry the serum on strips of filter paper before proceeding to extract it in the usual way. It is, however, a very debatable question whether, as Friedemann and Herzfeld appear to believe, (Berl. klin. Woch., No. 47, 1911), the dry film of protein can be penetrated by the solvents and completely extracted in so short a time as half an hour. A more satisfactory plan than this is to incorporate the fresh serum with calcined kieselguhr, which holds the watery part of the serum firmly but does not oppose any resistance to the free passage of the solvent whilst, besides, it affords a very large contact surface to the reagent.

The figures upon which the lipoid curve in table 1 is based were obtained by ether extraction of the dry kieselguhr-serum mixture, continued for six hours. In a series of studies at present under way, however, the ether method has given place to one which yields the total lipoid value. A description of this method for the determination of the total lipoids appeared in an earlier issue of this Journal.



A point to be emphasized is that by ether alone it is not possible to remove all lipoids. Indeed, no one solvent will accomplish this.

The cholesterin ester was saponified with alcoholic soda at 100° Centigrade. The free cholesterin was taken up with chloroform which was then dehydrated with strong sulphuric acid. For a successful result, of course, the dehydration must be thorough.

EXPERIMENTAL OBSERVATIONS CONCERNING THE RELATION OF THE LIPEMIA TO THE FOOD-FAT, ETC.

The various test diets given during a period of ten weeks, and the corresponding peculiarities of the urine-albumen and serum-lipoid curves, are graphically shown in Table 1.

Speaking in a general way of the entire period, it may be said that in proportion as protein substances were excluded from the diet, the albuminuria steadily decreased. But, curiously enough, to insure the physical comfort of the patient, and to keep his weight constant, it was found to be necessary at the same time to maintain a high grade of lipemia. This end was finally attained by a carefully adjusted regimen of cream and carbohydrates.

It will be noted that the highest lipoid value recorded in the curve was a little over 2%. This, however, since it is the ether value alone, does not represent the total lipoid value at that point. The true value there was nearly 3.20%.

Another interesting fact observed was that a progressive reduction of the specific gravity took place without a corresponding increase of the urine volume. In ten weeks the density decreased from 1.014 to 1.006, but the volume ranged only between 2000 and 2500 cubic centimeters.

The urine was tested for sugar daily with dilute Fehling's solution, and with Nylander's reagent. And once a week a fermentation test was made with controls. A positive fermentation test was twice noted, once in the first, and again towards the end of the second week. At other times the tests were negative. The amount of sugar present was, however, very small, and would ordinarily be reported as a trace.

One of the most significant facts brought out in the course of this work, and the one upon which it is desired to lay especial emphasis, was that the lipemia could be abolished by diet control.

This singular fact was first observed whilst the patient was limited to a strictly protein diet. During that week the serum was almost clear and only a trace of cloudiness remained. At the same time, however, the man lost weight rapidly, the skin assumed a muddy appearance, and he was moody and despondent. Moreover, at the end of this week, as it was natural to expect, there was an enormous increase in the albuminuria. The disturbance caused by this diet lasted over to the middle of the following, third week, when his subjective condition greatly improved and the albumen output diminished notably.

The serum again became clear in the fifth week. This time, strange to say, when the diet consisted only of milk and cream. During this week he consumed each day two quarts of certified milk and one pint of cream. In addition to this, no other food whatever was taken. On this diet, within two days the serum ceased to be milky, and appeared in every respect as it had during the all-protein period. Moreover, again, as in that period, he lost weight rapidly, and the same subjective and objective status re-appeared. At the close of

the milk and cream week, the evidence then pointing clearly to the fact that in order to utilize fat it was necessary for starch to be present, the diet was modified by the addition of a liberal allowance of bread. In a few hours after this starchy food was ingested the serum again became perfectly white. At the same time the change in his general condition was striking. Color returned to his skin and he became cheerful. The weight lost during the milk and cream week was promptly regained when he resumed a diet in which fat and starch predominated. From these experiences it was obvious that in this individual a massive cleavage of fat could not occur in the absence of a starch element, but, unfortunately, the phenomenon had not been studied by weight.

After the ten weeks period was over, therefore, in order to be sure that the foregoing observation was valid, the experiment was repeated, this time with definite lipoid determinations. Exactly the same phenomenon was noted. The details of the experiment are as follows:

Sept. 21st, at noon, before eating, and five hours after the morning meal, the blood was taken. The total lipoid value of this serum was 3.25%. The serum was as white as milk. Sept. 23rd, blood was taken at the same hour. The conditions were the same as before. In the interval, the daily diet had consisted of two quarts of milk, and one pint of cream. The total lipoid value of this specimen was 1.35%. The serum was practically clear and showed only a slight cloudiness. This was at noon. With the mid-day portion of milk and cream which he was then ready to eat, he was allowed all the bread he desired. At two o'clock, 2 hours after eating, the second specimen of blood was taken. Even in this short time, however, the lipoid value had risen to 2.20%. The serum was perfectly white and offered a most extraordinary contrast to the earlier specimen.

The subsequent history of this patient was interesting. Although his general condition was much improved by the dietary restriction, and he had gained in weight, the attacks of nose-bleed continued to annoy him. In order if possible to discover the causative lesion, therefore, a thorough exploration of the nasal cavity was made by Dr. Henry Horn. What was at first supposed to be an idiopathic ulcer of the septum was encountered. It was evidently of long-standing. The tissues about it bled freely when disturbed, and the hemorrhage was rather difficult to control. Somewhat later an accumulation of foul pus was discovered in the antrum of Highmore on the right side and the cavity was drained by a radical operation. As a result of this treatment, the epistaxis ceased directly, and within ten days the blood-serum became practically clear. At the present time, two months after the operation, the serum remains clear, and when blood is taken after a full meal it is not at all milky. The total lipoid value now is slightly less than 1.40%, an enormous reduction when it is considered that at one time the serum contained nearly four per cent. of fatty bodies.

The patient now weighs one hundred and eighty pounds, and continues to take a diet which largely consists of cream, green vegetables and fruit. The albuminuria persists.

The etiology of the peculiar lipemia here described is obscure. About the only conclusion so far tenable, and that a very general one, is, that the experimental data indicate a profound disturbance of a lipolytic mechanism. Perhaps the most conspicuous feature emphasized in the descriptive curves is the protectory action of the lipoids upon the protein substances of the body. Upon this point the evidence was clear and unmistakable. Whenever by dietary restrictions the lipemia was suppressed, the albuminuria was greatly augmented and an immediate loss of weight took place. Conversely, with an increasing lipemia the loss of albumen was noticeably reduced.

By excessive and repeated blood-letting, Boggs and Norris (loc. cit.) were able to produce a very remarkable lipemia in rabbits. There can be no doubt that the white serum so obtained, in many ways was analogous to the serum of this patient. However, the profound secondary anemia induced in the animal as a provocative lesion, did not enter as a noteworthy factor in the human subject, and there was in the latter, moreover, an obvious relation between the lipemic status and the sinus empyema. But here again the evidence leads one astray, for in other patients with sinus empyema, investigated by Dr. Horn, no visible lipemia was detected, and the blood appeared to be normal. A man with a very high grade of lipemia, now being studied, has parenchymatous nephritis, but he is not anemic, nor is there any evidence of sinus disease. Hence it would appear that a disturbance of the lipolytic system, such as that here dealt with, is highly individual and depends upon a pathological substratum at present unknown.

The general conclusion towards which the experimental data here stated appear to trend is that an intravascular lipoid current exists and that it is recruited from the food-fats through the agency of a carbohydrate derivative. In view of the fact that cholesterin esters were present in excess, the lipemia, after the Chauffard school, could be defined as expressive of a true hypercholesterinemia.

REPORT OF A CASE OF SINUS THROMBUS DUE TO WELCH GAS BACILLUS.*

By E. D. SHORTLIDGE, M. D., San Francisco.

F. D., male, age 29, single, plumber by occupation, born in France, was admitted to the medical service of the French Hospital November 20th with the following history: Has been in the United States about four years and has enjoyed good health during that time. Present illness dates from Sunday evening, the 19th, when he went to a French restaurant and partook heartily of a French dinner. About 10:30, soon after reaching his lodgings, complained of nausea, dizziness and some abdominal pain, followed by vomiting and purging, which continued during the night. In the morning, his symptoms continuing, he remained in bed. His employer, finding that he did not return to work, went to his room and, finding him in bed, had him sent to the hospital, believing his illness was due to ptomain poisoning. His temperature on admission was 98.4°; was put to bed and ordered broken doses of calomel followed by a saline purge. The following morning on making rounds the resident physician found his general condition much improved, but on looking on his pillow noticed it stained with pus which was also flowing from the external auditory meatus. He advised him to go to the clinic and see me.

He was first seen by me at 9 a. m., November 21st; not being able to understand much English, it was necessary to converse through an interpreter. At this time his nausea and vertigo had disappeared and, with the exception of being a little weak, he said he felt well. Between six and seven years ago, while serving in the sanitary corps of the French army, he had an attack of erysipelas, As a sequel he had an attack of acute otitis media in his right ear followed by profuse discharge, which continued for four or five weeks, gradually lessening in amount but never quite ceasing. Says he was treated by French surgeons until coming to this country; since then has not seen a surgeon but has treated the ear himself by washing and then drying it. Has never given him any trouble or caused him to lose any work, but says the present discharge is more profuse than ever before. He appears to be a well-nourished man of about 30 years and looks in good health. There is no spontaneous nystagmus. Examination of right ear shows slight edema over mastoid region with tenderness extending to tip. The external meatus filled with pus, profuse and a very foul odor. The canal at the juncture of the cartilagenous and bony portion is so small from the long-continued discharge that it is almost impossible to introduce the smallest speculae. On account of the tympanic cavity being filled with granulations it was difficult to distinguish any landmarks. Temperature 99°, pulse 80.

The following tests were made: Weber to diseased ear. Caloric reaction with cold water positive. A diagnosis of an acute exacerbation of a chronic otitis media, probably an infected cholesteatomata was made. The nature of the disease and its danger were explained to him and an immediate operation advised. He was unable to understand why an operation on an ear that had not troubled him since he had the discharge was so imperative, but said he would talk it over with his friends. During the day he decided to be operated on and the time was fixed for the following morning at 10 o'clock. The patient was etherized and the usual mastoid incision was made. On removing the cortical layer of the mastoid, foul and offensive pus under pressure and filled with gas, exuded. The mastoid cells were excenterated and the tip removed. After removing the tip, a small Bezold's abscess was uncovered, filled with gas. The tympanic cavity and attic were filled with cholesteatomata, which was carefully removed with a curette. In going over the mastoid cavity again with a searcher, a small space over the sinus was discovered. In following this up a perisinous abscess and a dark area somewhat smaller than a ten-cent piece on the sinus with a small granulation was discovered. The sinus was uncovered for about 1¼ inches until the vein looked healthy. The question whether to puncture, incise or open freely and pack each end arose, but as the vessel seemed soft and compressible with blood flowing through, it was decided that by relieving the pressure in removing the pus and the bony covering, a thrombus would be prevented. The cavity was packed lightly with sterile gauze saturated with a 25% solution of argyrol and the patient put to bed in good condition. At 8 p. m. his temperature was 100° F., pulse 90. He spent a somewhat restless night, sleeping little, but no pain. At 6 a. m., had temperature 101° F., but at 8 it had dropped to 100.2°, pulse 86, no pain, jugular soft and compressible. About 4:30 p. m., the resident phoned me that the patient had had a chill and his temperature was 104.6°, pulse 120. Realizing that a thrombus had formed, gave orders to prepare for ligating the jugular and lateral sinus. About 5:30 the patient was again etherized. The jugular vein was found to be thrombosed to about the facial vein and was resected from just about the clavicle to the jugular bulb. The lateral sinus was filled with a thrombus from the bulb to the knee, where fluid blood was found. In dissecting in the upper part of the neck the tissues were found infiltrated with gas. The wound in the neck was closed except for a small place for drainage and the mastoid wound packed with gauze and argyrol solution. On account of a rapid and thready pulse he was given 250 cc. normal salt solution in the vein and put to bed in fair condition. His condition not improving, he was given stimulants by rectum and by hypo. Another 250 cc. normal salt with 3 cc. of a mixed infection vaccine was given in the vein. About 3 a. m. his condition became worse and about 3:30 he died perfectly conscious.

A culture taken at the time of the first operation showed a large non motile bacillus resembling the Anthrax Bacillus, in pairs, ends rounded and encapsulated with characteristic gas production of the Bacillus Aereogenous Capsulatus.

To my mind the great lesson this case teaches is how serious a so-called simple discharge from the ear may become without any apparent cause and how an early and adequate operation will save a patient from such grave consequences.

* Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, January 23, 1912.

RESULTS OBTAINED WITH A MODIFIED VACCINE.

(A Report of Ninety Cases.)

By LOUIS D. GREEN, M. D., San Francisco.

The publicity given to Schafer by the lay press has a tendency to cause medical men to regard with suspicion all claims for the value of the vaccine therapy as advanced by him. This is to be expected, as some of the claims made greatly exaggerate its therapeutic powers. It is to be regretted that such is the case, as the vaccine probably has a distinct value in the field of medicine. By some who have had little or no experience with that particular form of vaccine therapy, it has been denounced as valueless; by others lauded to the skies as a panacea for nearly every ailment that man may be heir to. In both instances there seems

to be a lack of knowledge and experience, as well as a misunderstanding as to the manner of its action.

At present the vaccine is issued by a large pharmaceutical house for experimental purposes only, but in view of the fact that many clinicians are using it and that some very serious results have followed its administration, a word of caution in regard to its use seems opportune.

It is not a vaccine as ordinarily understood, as it contains no bacterial bodies, but is a bacterial filtrate with the albumin precipitated.

The principle underlying the treatment is based upon the assumption that a multiplicity of infections occur in the various diseases and that a vaccine, in order to be most efficacious, should contain the products of the secondary invading organisms, as well as that of the specific bacterium causing the disease.

As the majority of infections are due to the common pathogenic organisms, the vaccine which Schafer calls the mixed infection vaccine contains approximately an equal proportion of the products of the ordinary pathogenic organisms, viz: various strains of staphylococcus pyogenes, streptococcus pyogenes, pneumococcus, bacillus coli communis, bacillus typhosus, bacillus pyocyaneus, etc.

The specific vaccines, i. e., those given in specific diseases as typhoid, gonorrhea, pneumonia, etc., contain a predominance, approximately 50 per cent., of the products of the specific organism causing that particular disease.

The autogenous vaccines are prepared the same as the stock vaccines, except that cultures are made from the bacteria causing the infection instead of from stock cultures.

In the past year the writer has treated ninety cases by the above method. These are given in the accompanying table; the number of treatments per patient varying from one to forty, or more.

The vaccine used was principally the stock vaccine, but in many cases autogenous vaccines were prepared according to Schafer's method. These were used in various combinations, concentrated and dilute, and were given subcutaneously as well as intravenously.

REACTION FOLLOWING INTRAVENOUS INJECTION.

This usually commenced about thirty minutes after the injection and lasted from fifteen to forty-five minutes, the average being twenty minutes. It consisted of a feeling of chilliness followed by a severe rigor, rapid pulse, marked rise in temperature, difficult respiration and flushed face sometimes passing to cyanosis, and was often accompanied by nausea and vomiting, diarrhea, pain in the lumbar region, pain at the seat of disease, severe headache and a peculiar taste. Within two to three hours after the chill the patient would break out into a profuse perspiration, but afterwards usually felt much better than before receiving the vaccine. While the majority of patients complained of feeling very cold, the rigor was in some cases accompanied only by a feeling of chilliness along the spine. In other cases, even though the chilliness was absent, the patient was unable to control the shaking. Often the rigor was so severe that it was difficult to obtain the radial pulse. The temperature rose to the highest point in about two hours, sometimes reaching 105° or 106°. In from four to six hours later it would drop to normal or subnormal. The cyanosis was sometimes so severe that, with the difficult respiration and weak pulse, it gave one the impression of the patient being in extreme collapse and in imminent danger of dissolution.

A peculiarity of its seemingly selective action was increased pain at the seat of disease during the height of the reaction. For example, in rheumatic or tubercular joints the affected parts became more painful, but this would entirely disappear after the reaction had subsided. It usually reappeared again in eight to ten hours, but with less intensity. After each injection it became less, until it finally disappeared. The nausea and vomiting passed away in a few hours, and the patient was able to resume the diet he was on previous to the injection. The diarrhea seemed to come on at the height of reaction, and it was often difficult for the patient to control his bowels.

After the reaction had subsided the appetite increased. The relief following the reaction was particularly noticeable in cases of pneumonia with extensive lung involvment, where before injection breathing was rapid and painful, after the chill had subsided the breathing became slower and less painful and the general condition of the patient was very much better.

The loss of weight which often accompanies the severe reactions is sometimes so great as to make it a factor of considerable importance in subsequent injections. This is particularly important in tubercular cases where after a severe reaction the patient will often lose from four to six pounds within three days.

At present the writer endeavors to obtain a reaction less severe in intensity, although a slight rigor or chill is the effect aimed at. The severe reactions heretofore obtained caused too great a depression, and while the benefit derived was often very pronounced, the danger connected with it was correspondingly greater. Similar results can be obtained with a less severe reaction and this danger almost entirely eliminated.

REACTION FOLLOWING SUBCUTANEOUS INJECTION.

We have almost entirely discontinued the administration of the vaccine subcutaneously, using it in that manner mostly in cases where it is difficult to enter a vein. Experience has taught us that in order to get the quickest and best results, the intravenous method is the one of choice.

When given subcutaneously the reaction came on three to four hours later with loss of appetite, headache and a feeling of general malaise. In some cases three or four chills occurred during the twenty-four hours. There was a marked inflammatory reaction at the site of injection, which became very painful. This reaction in many cases lasted for several days.

Those patients who had the vaccine administered

in both ways invariably preferred to have it given intravenously, as then, where the vaccine was properly prepared and the proper dose given, although the chill may have been more severe, the reaction was over in a few hours and the patient felt much better after it. The cases we have treated have amply demonstrated to us the superiority of the intravenous over the subcutaneous method.

In the ordinary manner of vaccine treatment it has been the custom to stop short of any marked reaction, but the method according to Schafer goes far beyond this point. Schafer claimed that the vaccine was harmless and that the clinical symptoms could be ignored, but this is absolutely contrary to the writer's experience, and though he regards it as a very valuable therapeutic agent, he has found it to be a very dangerous one if used carelessly or unintelligently. While a certain dose can be given to some patients with safety, with a marked and rapid improvement in their condition, in other cases the same size dose may cause a fatal termination.

The psychic effect which the severe reactions produce is undoubtedly the cause, in many cases, of the apparent improvement. It is hardly possible that the vaccine should have any curative effect on a disease not due to infection. In some, where there was seemingly an improvement at first, the condition returned as soon as the psychic element wore off.

A number of cases where a fatal prognosis had been made were given the vaccine as a last resort. The greater number died, but a few of them recovered and did so apparently only as a direct result of the vaccine. While in terminal cases great results are not to be expected, the patient should be given the benefit of the doubt and the vaccine administered, but in small doses. In this way it has been possible to bring to complete recovery cases that were considered hopeless.

The following table shows the diseases treated and the results obtained. Some of these patients are still under treatment, but the result in each is well enough indicated to make it possible to draw conclusions therefrom:

CASES TREATED.	No.	Recovered.	Greatly Improved.	Slightly Improved.	No Benefit.	Died.
Cellulitis of face	1	1	....	....	....	....
Otitis media	2	1	....	....	1	....
Carbuncle of neck	1	....	....	....	....	1
Acute articular rheumatism	3	2	1	....	....	....
Chronic articular rheumatism	3	2	....	....	1	....
Arthritis deformans	2	....	....	....	2	....
Typhoid fever	4	2	....	....	1	1
Pneumonia	14	12	1	....	....	1
Empyema	3	2	....	....	....	1
Erysipelas	7	5	....	....	....	2
Meningitis	1	....	....	....	....	1
Pulmonary tuberculosis	9	....	4	1	4	....
Tubercular arthritis	3	1	1	1	....	....
Tubercular adenitis	1	1	....	....	....	....
Cervical adenitis	2	....	1	1	....	....
Tubercular synovitis	1	....	1	....	....	....
Bronchial asthma	4	2	....	....	2	....
Osteomyelitis	2	2	....	....	....	....
Fistula in ano	1	1	....	....	....	....
Gonorrheal epididymitis	1	1	....	....	....	....
Sciatica	2	....	....	1	1	....
Corneal ulcer and hypopion	1	....	....	....	....	1
Duodenal ulcer	1	....	....	1	....	....
Peritonitis	1	1	....	....	....	....
Tubercular peritonitis	1	....	....	1	....	....
Chronic rhinitis	2	....	1	....	1	....
Pan-sinusitis	1	....	1	....	....	....
Pyemia	1	....	....	....	....	1
Septicemia	2	2	....	....	....	....
Sarcoma of liver	1	....	....	....	....	1
Infected wounds	12	6	3	1	1	1
Total	90	44	14	7	14	11

Cases Recovered.

Forty-four were entirely cured of the condition for which they were treated. These included four cases that were given the vaccine as a last resort, their condition before the vaccine was administered indicating that in all probability they would have died.

While with the exception of these four cases, the majority undoubtedly would have recovered with the ordinary methods of treatment, the rapidity with which the results were obtained was so much greater than would ordinarily be expected that we have to credit the vaccine with the benefit derived.

In the cases of acute articular rheumatism, the pain in the affected joints disappeared soon after the reaction, to reappear within six to eight hours, but with less intensity. It became less after each injection, until it finally disappeared entirely. The convalescence was shorter than usual. No internal medication was given.

In the cases of typhoid fever both were delirious before the administration of the vaccine. Eight hours after the first injection they were rational and remained so until discharged. The disease ran a mild course, though of about the usual duration.

In the cases of pneumonia, while in the majority convalescence was apparently not shortened, the general condition of the patient at the height of the disease was very much improved by its use. In one of these cases, with beginning consolidation, one injection seemed to abort the condition. No more vaccine was given, as the patient refused further treatment. Recovery was rapid.

In the cases of erysipelas the course was milder and shorter than usual. One case had a relapse after the vaccine was discontinued, but this rapidly cleared up with four more injections.

In the two cases of bronchial asthma, a cure seemed to be effected. From last reports no return of the condition has occured.

In the case of epididymitis, with a complicating orchitis as a result of gonorrheal urethritis, three injections effected a cure.

The infected wounds healed much more rapidly than in cases where the vaccine was not used. The usual surgical treatment was followed in conjunction with the vaccine.

Greatly Improved.

Fourteen cases were greatly improved with a number of these still under treatment. In some we were unable to go beyond a certain point in their improvement, and although this was quite marked, no advance could be made beyond this point.

In the case of acute articular rheumatism, although the pain and swelling in the affected joints were greatly reduced after each injection and the patient finally discharged cured, the convalescence was not shortened.

The case of pneumonia developed an empyema which had to be drained. The vaccine was continued and with the aid of forced expirations this cleared up much sooner than would ordinarily be expected, the lung expanding to almost the normal size when the patient was discharged.

In the cases of pulmonary tuberculosis, the most noticeable thing was the relief of the cough. After the first two injections it was greatly lessened in severity and frequency. The temperature became normal and remained so. The appetite improved and the general condition was much better than before the vaccine was given.

Slight Improvement.

These seven cases showed slight though definite improvement as a result of the vaccine.

No Benefit.

In the fourteen cases the results obtained were very disappointing. The conditions in many of these were similar to those cases greatly benefited or cured, and the treatment was carried on in the same manner, but no benefit whatever was derived from its use.

The cases of arthritis deformans seemed to be slightly improved at first, but the treatment was discontinued after giving it a fair trial, as no permanent benefit was derived.

The case of typhoid fever was given the newly prepared stock vaccine. On account of the severity of the reactions and great depression which followed its use, the dose was reduced to .065 c.c. and was finally discontinued after a fair trial, and although the patient recovered, no benefit was obtained that could not have been attributed to the usual methods of treatment followed in such cases.

In the cases of bronchial asthma the results were negative. In fact, in one of these the patient seemed to be worse after each injection. The vaccine was discontinued after a fair trial.

The case of chronic rhinitis received an autogenous as well as the stock vaccine with no benefit.

In the case of infected wound resulting from a compound fracture the treatment was discontinued as no benefit from the vaccine occurred, although the patient was finally discharged cured.

Patients That Died.

In one of these eleven cases a tentative diagnosis of septic endocarditis was made, as the symptoms pointed towards that disease and the vaccine was administered for that reason. Autopsy proved it to be sarcoma of the liver and intestines. The patient died about one week after the last dose of vaccine was given.

Another, with corneal ulcer and hypopion, gave symptoms of secondary brain involvement and was given the vaccine accordingly. Autopsy proved death to be due to uremia resulting from a chronic interstitial nephritis complicated with chronic valvular disease.

Others of these cases came under treatment too late, as in the case of typhoid fever, where the patient was in extremis when seen by the writer and the treatment was given without any expectation of benefit being derived.

After carefully watching these cases, we feel convinced that in some instances the immediate cause of death was the vaccine. In these cases the symptoms indicated the introduction into the circulation of a powerful poison, the fatal termination following in from one and a half to three hours after its injection, accompanied by an exaggeration of some of the symptoms of the reaction. These were desperate cases and in all probability would have died, but in view of the fact that a number of equally desperate cases where a fatal prognosis had been made, were saved by the administration of the vaccine, it is important that it be given, but in such doses that the severe reactions are avoided.

In the cases where the vaccine apparently played no part in the fatal issue, death did not follow till from one to six days after the last injection was given. There was an absence of the symptoms of reaction in the period intervening between the last dose and the time of death.

Schafer in *The Therapeutic Gazette,* April, 1911, says that from five to fifteen c.c. of the vaccine can be given intravenously, with 10 c.c. as the initial dose in ordinary cases. As an example of the danger of using the vaccine in such large doses, an elderly patient received 6 c.c. of pneumonia vaccine and died within an hour and a half after its injection with symptoms of a severe toxemia coming on soon after the vaccine was given; although another patient, a young robust adult with an extensive lobar pneumonia, was given 7.5 c.c. of the same vaccine with marked improvement in his condition and final recovery.

Hints on Treatment.

As the different vaccines show a difference in strength (tubercular vaccine causing a reaction much more severe than the others) and as different patients react differently to the same vaccine, it is important that the physician carefully note the reaction resulting from the first injection, the better to enable him to judge the size of the succeeding doses if it is to be continued. If this is not done, serious results may follow its use, as one of the most important points in judging the size of the dose is the symptoms that arise during the reaction.

The desired reaction is obtained when there exists a rather mild chill with little or no difficulty in breathing. The presence of cyanosis, while usually harmless, is not desirable, as it shows too great depression. Although the rise in temperature may at times be so high as to be alarming to the inexperienced, it accompanies nearly all the favorable cases. The perspiration is desirable, as it helps to eliminate the toxins and relieve the kidneys of much of their work. Following this there should be a marked improvement in the patient's condition.

After each successive injection the reaction usually becomes milder and the size of the dose has to be correspondingly increased.

In the feeble and aged, as well as in the young, the size of the dose should be reduced accordingly.

In very exhausting diseases or in desperate cases

the initial dose should be very small and increased as tolerance is established.

In treating with the vaccine one must not abandon all other forms of treatment, as any method that will aid the body in fighting the disease is desirable.

It has been found that the following procedure proved the most efficacious:

The patient should abstain from food for about three hours previous to the injection, as the reaction may cause vomiting. He should be in bed in a recumbent position. The veins at the elbow are usually chosen, the skin having been previously sterilized.

The vaccine should be injected slowly and it is important that none of it enters the tissue surrounding the vein as it causes a very painful local inflammatory reaction which persists for several days.

The patient should remain in bed for two or three hours after the chill has subsided, as collapse is apt to follow on getting up too soon.

In the aged, or where the patient is weak or his condition bad, stimulate at the time of injection. It has been the writer's custom to use 1/30 gr. of strychnine hypodermically as a routine in such cases. Other stimulants can be given as required.

For the headache, pain in the lumbar region or at the seat of disease when very severe, morphine may be necessary. On account of the profuse perspiration, cool normal saline solution per rectum by the drop method has been found very beneficial, particularly in typhoid cases.

Doses.

As at present prepared, the vaccines cause a much more powerful reaction than that which Schafer originally prepared, and the writer's usual procedure in the average case is to give as the initial dose 0.5 c.c. diluted with 2 or 3 c.c. of sterile distilled water.

Where the patient is very feeble, or where the disease has progressed so far as to make the reaction in itself a menace, we have sometimes reduced the dose to .033 c.c. with good results.

While 0.5 c.c. is the average initial dose with most of the vaccines, with the tubercular even this dose is too large. This vaccine produces a more severe reaction than the others, and for this reason the average initial dose used by the writer has been .065 c.c. diluted with sterile distilled water.

The above doses should be rapidly increased as tolerance is established. In the case of tubercular vaccine, .065 c.c. at a time; with the others, .065 to 0.5 c.c. This will depend largely upon the severity of the reaction that follows. Where this is mild and where the tolerance of the patient is rapidly obtained, the dose should be correspondingly larger, remembering not to give a dose too large to be within the bounds of safety.

It should be administered daily for the first six or seven days, then every other day for about one week, then twice and finally once a week. This will depend largely on the disease treated, as well as on the rapidity with which convalescence takes place. It is important not to stop the injections too soon as a relapse may occur if this be done.

In pneumonia it has been found advisable to give the first three injections at twelve hour intervals, or at about the time the temperature begins to rise again. After this, daily injections for about four days was usually all that was necessary.

It is very important that the injection should not be repeated until the symptoms of the previous reaction have subsided. This is particularly true of cases with pulmonary tuberculosis, as the loss of appetite and weight and feeling of general malaise that occur in many of these cases as a result of the reaction is greater and persists for a longer period than in the other conditions, sometimes lasting three days. In these cases we have found it best not to give the vaccine oftener than every other day, and in some cases once or twice a week is often enough. The dietetic, climatic, hygienic and any other form of treatment that may aid the patient in fighting the disease should be followed.

In infected cases where pus is present it is necessary that ample drainage be maintained and the ordinary surgical treatment in regard to asepsis be followed.

In typhoid or other cases that persist for any length of time it is advisable on account of the profuse perspiration to give normal saline solution per rectum by the drop method. They usually absorb large quantities of this. It will be found that cold baths are not necessary to reduce the temperature.

Where possible and the urgency of the case will allow, an autogenous vaccine should be given as it generally acts more efficaciously.

Conclusion.

In conclusion, we wish to emphasize the following points:

The dose should be small enough to give a mild chill. Severe reactions are to be avoided.

Tubercular vaccine should be given in smaller doses than the others.

Give the vaccine intravenously if possible.

Watch the reaction so as to know the proper procedure to follow.

Stimulate at the time of injection, if the patient's condition requires it.

Do not repeat the injection until the symptoms of the previous reaction have subsided.

Other recognized methods of treatment are not to be discarded.

In all surgical cases ample drainage must be maintained.

If possible autogenous vaccines should be used.

IMPORTANT POINTS IN THE EARLY RECOGNITION AND DIFFERENTIATION OF SOME DISEASES OF THE NERVOUS SYSTEM.*

By H. C. McCLENAHAN, M. D., San Francisco.

Many of the errors made in the early diagnosis of several important diseased conditions of the nervous system are avoidable and generally result from

* Read at the Seventh Annual Meeting of the Nevada State Medical Association, September, 1910.

overlooking, disregarding or not properly valuing certain symptoms, or refusing the assistance derived from simple laboratory procedures.

Such errors frequently entail unnecessary suffering and anxiety to patient and embarrassment or even humiliation to physician. Hence, every effort at emphasis, either by recounting, regrouping, additions or otherwise, by which a reduction is made in the occurrence of such errors is justified. No disease is discovered, symptom analyzed, or method described in this paper; in fact, all that I expect to say has been said on innumerable occasions before, nevertheless errors occur with sufficient frequency to justify a representation, in so far as my experience goes, of some of these "sins of omission rather than sins of commission."

The diagnosis of disease is often attended with difficulty, when the most careful and painstaking methods are used in their investigation, by the most capable and conscientious physicians, that it really seems a misfortune when the diagnosis "stares us in the face" and is not recognized.

The great Osler says that "most mistakes made in diagnosis are due to lack of sufficient examination." This is, no doubt, responsible for the majority, especially if in "sufficient examination" is included interpretation and valuation of symptoms. A feature of misdiagnosis, or rather lack of diagnosis, which has frequently impressed me, results from the disregarding of objective symptoms, through optimistic tendencies, acquired from habit in our relation to the management and treatment of cases. Optimism in diagnosis is as objectionable as pessimism is undesirable in the treatment of disease. Optimism and ignorance are dangerous to medical science; pessimism and knowledge retard its progress, while optimism and knowledge are its greatest beneficiaries. He who combines pessimism in diagnosis, with optimism in treatment, is the ideal physician, the reverse of which is not true. Most physicians can become good diagnosticians if they will persist in, and insist upon, sufficient examination of all cases. Especially important is the cultivation of the habit of grouping, interpreting and valuing symptoms.

The time factor in examination is, of course, an important item; consequently the desirability of any method or means by which we can "place our finger on the diagnosis," as it were. Do not understand me to oppose systematic examination, but to recommend to the busy physician a "thorough systematic examination of every organ in the body" as most of the works on diagnosis insist upon, is unnecessary and unavailing in many cases. A "thorough systematic examination of every organ in the body" requires more time, equipment, and more knowledge than most of us possess, and is more expensive than the majority of patients could or would pay. Aside from the matter of time and expense, admitting that they are both important factors, in many instances neither are necessary if the proper interpretation and valuation is placed upon symptoms presented.

We know that many symptoms are apparently common to several diseases, but upon proper and sufficient analysis, we are generally able to find something that will put us on the correct road for diagnosis.

In a paper of this length, only a few of the diseases can be discussed. Hence, I will first mention a few of the organic nervous diseases, frequently confused with physical diseases which are usually differentiated by regarding some of the prominent objective evidence of the former that in many instances are overlooked entirely. Secondly, some of the so-called functional nervous disorders often unnecessarily confused with organic diseases in the nervous system, and points that are useful in the differentiation of the two.

Under the functional disorders I have selected as ones of the most importance, owing to the frequency of their occurrence and the urgency for an early differentiation, neuralgia, neurasthenia and hysteria. This triad have usurped the rights of almost every known disease.

Neither indigestion, rheumatism nor malaria have received half so much homage at the hands of medical men as these rather rare diagnostic "waste baskets." But thanks to modern medical progress they are being relegated to their rare, but proper place in diagnosis. In my experience the recognition and differentiation of these conditions from physical disease, outside of the nervous system, are less frequent than confusion with early organic disease in the nervous system, and in practically all cases well marked objective evidence of the real condition was available.

In the recognition and differentiation of these diseases I wish especially to call your attention to the investigation along three lines: pain, reflexes, and laboratory findings. Pain is, of course, the symptom for which we are most often consulted. Volumes have been written about it, but for our purpose we are especially concerned with its distribution, i. e., is it peripheral, root or central in distribution, and is it accompanied with tenderness? Pain may be functional, but tenderness is always organic. The study of the character of pain is subjective, while its distribution is objective; consequently, the more important for neurological diagnosis.

Peripheral pains must follow the anatomical distribution of nerves; root pains conform to the segments of the spinal cord; while central pain has no known anatomical or physiological distribution.

The importance of the reflexes lies both in their behavior and location. The principal ones are pupillary, abdominal, knee and Archilles jerk. Their exaggeration may be functional, but their absence is invariably organic, while the presence of ankle clonus or Babinski are always organic. The principal laboratory assistance is derived from the lumbar puncture of Quincke. Its performance is simple and harmless, while the information furnished is sometimes of inestimable value. The procedure is not utilized by the profession in ratio to its diagnostic assistance or indications for treatment.

The serum reactions are sometimes of much help, especially those for tuberculosis and syphilis.

The latter, however, has not been simplified sufficiently to be used by the physician, but requires especial training, experience, and extensive laboratory equipment for its utilization in diagnosis. The changes in the cerebro-spinal fluid, in many conditions, antedate the appearance of sufficient symptoms for diagnosis and positive findings are extremely valuable.

Returning to the question of pain, especial mention should be made of tabetic crises. A placard bearing the inscription, "Look out for Crises," placed in every operating-room would save many useless laparotomies, because a tap on the patella tendon, or a ray of light thrown upon a momentary shaded pupil would change the entire aspect of the case at once. This applies with equal force to the quantities of bismuth and astringents administered in the cases of intestinal crises; and urethras dilated or bladders irrigated in cases of vesical crises.

I cannot recall the history of a single case of tabes that does not show that the patient was treated for either rheumatism or neuralgia in the early stages. In this connection, neuralgia and neuritis should be mentioned. The question of the existence or non-existence of neuralgia, aside from neuritis, needn't concern us, but we should know that impaired motion, sensation, or nerve tenderness always means neuritis and not neuralgia. Neither do referred pains cause tenderness in nerve trunks, or motor or objective sensory phenomena. In all cases of pain or paresthesias, a little investigation as to whether it conforms to peripheral or root distribution means so much, and is so seldom done. Either Heads or Seiffers charts are reliable for this purpose.

With regard to the reflexes, a few points need emphasis. The loss of the pupillary light reflex or Argyll-Robertson pupil invariably means syphilis, its testing requires only a moment. The same applies to the patella and Achilles tendon jerk. The latter is frequently lost in early sacral tabes when the knee jerks are retained. A neurasthenic syndrome minus either tendon, abdominal or pupillary light reflex generally means tabes, paresis, cerebral or spinal syphilis, while hysterical manifestations minus abdominal reflex means multiple sclerosis or plus Argyll-Robertson pupil indicates syphilis.

All obscure pains or paresthesias plus pinhead or Argyll-Robertson pupils mean syphilis of the central nervous system, including tabes and paresis.

The time consumed in stroking the soles of the feet, and forcible flexing the foot on the ankle is well spent, when the mere presence of Babinski or ankle clonus definitely determines a lesion somewhere in the pyramidal tracts, and yet so few physicians utilize these simple procedures that many times hold the key to the situation.

All that has been said with regard to pain and reflexes, while affording most important and satisfactory information, is small as compared with the data gained from the lumbar puncture. In many instances these symptoms may be confusing or contradictory, but the presence of increase in the cellular elements of the spinal fluid is absolute and final in its demonstration.

The neurasthenic often presents many and obscure symptoms, and the hysteric is capable of simulating at times symptoms that are common to almost every known ailment, yet neither at any time has been able to adduce a cellular or chemical change in the constituents of the cerebro-spinal fluid.

In conclusion, I wish to state that while the observance of the above is not claimed to furnish an exact diagnosis of all nervous diseases, yet I do insist that if the profession will avail themselves of the information gained by more frequent use of these simple aids, fewer tabetics and paretics would have the seriousness of their condition go unrecognized so long, while many organic diseases of the nervous system would receive the benefit resulting from the institution of early and proper treatment. Illustrating cases could be cited "ad infinitum et nauseatum," in justification of the above, and to do so would practically entail the mention of hundreds of cases, covering fifteen years of experience, in dealing exclusively with nervous diseases in both public and private hospitals and in private practice. However, I do not deem it necessary, as a means of impressing upon you the importance of observing the points mentioned by a long list of cases, but hope that you will recall these points in your routine examination, and I am sure that the additional time spent will be amply rewarded, in many instances, by putting you in line for correct diagnosis.

STRANGULATED FEMORAL HERNIA CONTAINING AN UNDEVELOPED KIDNEY.

By J. WALTER SEAWELL, M. D., Healdsburg.

I first saw this patient in consultation with Dr. Kerr. He presented the following history: Male, widower, eighty-three years old. Had always enjoyed good health, with the exception that ever since he could remember he had been troubled with a lump that would appear from time to time in his left groin; the lump would remain for a few hours then disappear, but was always accompanied by pain in the epigastrium. About six weeks ago, began having pain in the epigastrium accompanied by vomiting, but the condition was not severe enough for him to consult a physician. One week ago was around as usual; five days ago, either during a vomiting spell or while lifting, the lump returned accompanied by severe pain and vomiting. Dr. Kerr was called and a diagnosis of strangulated hernia was made; an attempt to reduce under chloroform was unsuccessful; Dr. Kerr called in a surgeon who sustained the diagnosis made and advised immediate operation. On being called in on the fifth day I found the patient in a fairly good condition, pulse 80, temperature 99 3/5°, somewhat emaciated, small epithelion on the face, arteries somewhat sclerotic, lungs in good condition, abdomen apparently presented nothing except some distention over the epigastrium, also some resistance to pressure in that region, no particular tenderness in any one spot. In the left groin was a mass about the size of a hen's egg, firm to the touch, somewhat tender, immovable, was not tympantic, had exactly the same feeling that you would expect to find in a strangulated gut. Immediate operation was advised and consented to.

Operation. An incision was made directly over the mass; the contents of the hernia were exposed surprisingly quick; there was not any sac covering a blue black mass that at first appeared to be gut; no fluid surrounded it. On close examination the mass proved to be solid and attached by a pedicle, but closer examination proved the mass to be a small undeveloped kidney attached by its ureter. The femoral canal was enlarged and an attempt made to reduce the kidney, but it was hard to reduce and being afraid that it would give trouble if replaced, the organ was amputated, the ureter cauterized and the wound closed, leaving a couple of strands of silk worm gut as drainage.

The patient stood the operation well, soon recovered from the anesthetic. But it was soon apparent that the relieving of the strangulated kidney did not relieve him either of his vomiting or pain, as both seemed to get progressively worse. The vomitus, which was the first that I had the opportunity to examine, had the appearance and odor that you would expect to find in carcinoma of the stomach. The urine excreted was up to normal in quantity, showing that the kidney removed played a very small part in the secretion of urine. Dressing on the third day showed a clean wound. The patient died on the fourth day.

On examining, the specimen removed showed an undeveloped kidney nearly all sinus surrounded by a thin cortex. On the superior surface was quite a distinct cleft showing the lobulated condition that you find in the kidneys of an infant, weight ½ ounce, length 2 inches, 1 inch broad and about ½ inch thick.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Serums and Vaccines of the U. S. P. and N. N. R.*

2. Bacterial Vaccines (Bacterins)

The following Bacterial Vaccines described in New and Nonofficial Remedies have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Acne Vaccine.—A vaccine prepared from acne bacilli (Bacillus acnes).

Bacillus Coli Vaccine.—(A suspension of killed bacillus coli communis in physiologic salt solution, with an added preservative).

Bacillus Pyocyaneus Vaccine.—(A suspension of killed bacillus pyocyaneus).

Friedlander Vaccine.—A vaccine prepared from the Friedlander bacillus.

Gonococcus Vaccine.—(A suspension of killed micrococcus gonorrhea (gonococcus of Neisser) in physiologic salt solution, with an added preservative).

Micrococcus Neoformans Vaccine.—A vaccine prepared from micrococcus neoformans.

Pneumococcus Vaccine.—(A suspension of killed diplococcus pneumoniae in physiologic salt solution, with an added preservative).

Staphylococcus Vaccines.—(Suspensions of mixed strains of killed staphylococcus pyogenes albus, aureus, and citreus, in physiologic salt solution, with an added preservative).

Streptococcus Vaccine.—(A suspension of mixed strains of killed streptococcus pyogenes in physiologic salt solution, with an added preservative).

Typhoid Bacillus Vaccine.—(A suspension of killed bacillus typhosus in physiologic salt solution, with an added preservative).

While N. N. R. gives indications for the uses of these various bacterial products, their use is confined to those specific infections to which these various pathogenic organisms give rise. Their applicability should wherever possible, be confirmed by bacteriological diagnosis.

Bacterial vaccines are conveniently classed as "stock" vaccines, and Autogenous (Homologous) Vaccines.

Stock vaccines are suspensions of killed pathogenic bacteria in physiologic salt solution to which phenol or trikresol has been added as a preservative. They are standardized to represent an approximate number of bacteria to the cubic centimeter. Stock vacvines may represent but one specific organism, or many diverse strains of an organism, in which latter case they are termed "polyvalent" vaccines. Or, they may consist of two or more different organisms, in which case they are termed "mixed" or composite vaccines.

An example of the former (polyvalent) is Streptococcus Vaccine. The streptococcus occurs in various modifications under such widely differing conditions as erysipelas, scarlet fever, and puerperal septicemia. A serviceable stock vaccine should therefore represent strains of streptococci derived from these various sources. If the vaccine does not represent the particular strain responsible for the infection, it is not likely that the vaccine will prove of service. This would characterize the limitations of the stock vaccine, but the case of the streptococcus is rather an extreme example of an organism's proneness to undergo modification. In most other instances differentiation is less marked and stock vaccines frequently have proved as serviceable as those prepared directly from infecting material taken from the individual source. The most extensively employed biological products are prepared from "stock" material, as for example—Diphtheria Antitoxin, Tetanus Antitoxin, Vaccine Virus, the various Tuberculins, and practically everything listed by producers of biological products.

Mixed Vaccines are a recent development in the field of vaccine therapy and their introduction is due to the fact that different types of organisms are found frequently associated in various bacterial infections. It has been observed also, that a pure infection in which but one type of organism is the etiological factor, may develop into a mixed infection, and further, the bacterial flora of a mixed infection may undergo modification in the course of the disease.

While the production of mixed stock vaccines savors of empiricism, their employment in some types of infections has been amply justified. Indeed, it would seem from the present tendency in this field of research that the mixed vaccine, correctly prepared and properly balanced, will become quite the proper thing.

One of the first vaccines of this type to gain prominence is a vaccine composed of killed staphylococci and the acne bacillus. These organisms are frequently found associated in Acne infections. Cultural growths from chronic gonorrheal infections frequently show a variety of organisms, chiefly: gonococci, streptococci, staphylococci, coli bacillus and Micrococcus catarrhalis. A vaccine representing as nearly as may be, the general run of gonorrheal infection, while suggestive of the "shotgun" device, has generally proved more efficacious than the straight gonococcic vaccines. In gonorrheal arthritis, in which the gonococcus alone appears to be the etiological factor, the straight vaccine is more commonly employed.

The pneumococcus, streptococcus and staphylococcus are frequently found associated in diseases of the respiratory tract and in other localized infections. Several mixed vaccines of this type have recently been passed upon by the Council on Pharmacy and Chemistry and included in New and Nonofficial Remedies (Jour. A. M. A., Sept. 9, 1911, p. 902).

While a legitimate field may exist for such products as Mixed Gonorrheal Vaccine, Staph-Acne Vaccine, and possibly a combination of the pneumococcus, staphylococcus and streptococcus, the multiplication of such empirical combinations is a questionable practice and savors rather too strongly of the proprietary nostrum. It is not conclusively established that the indiscriminate introduction of dead

* The first paper of this series appeared in the April, 1911, number of the California State Journal of Medicine.

cells or other bacterial products is incapable of doing harm. Is one justified, in an infection calling for large doses of Bacillus coli communis, to administer a vaccine containing proportionately large doses of pneumococci, streptococci and staphylococci, on the assumption that these organisms might in some remote manner be also implicated? Would it not be more to the point to first ascertain the presence of these organisms and the part each plays in the infection? The objection that in acute cases this procedure would occupy too much time can hardly justify the experimenting with an unknown quantity. Resort can be had to emergency measures of established value.

The work of Wright and his associates has leaned perhaps too sharply toward conservatism, but the accurate and painstaking effort of these men has given rise to definite and tangible results. They have demonstrated that the introduction of the dead bacterial cells stimulates the production of various bactericidal substances, as opsonins, agglutinins and bacteriolysins, and that these substances are capable of identification and verification.

The question of dosage is perhaps the most vexed problem confronting the user of bacterial vaccines. Some advocate a minute dosage, continuously increased and avoiding a reaction. Others suggest a dosage just bordering on a reaction, and still others insist that a violent reaction is essential. Then, in the matter of spacing of dosage. Some await the subsidence of the negative and positive phases before administering a subsequent dose; others give smaller doses at frequent intervals, and still others give large doses at intervals of twelve to forty-eight hours. Theoretically, the proper dose is that which will produce a mild reaction and this dose should not be repeated until both the negative and positive phases have subsided, when the dose can be somewhat increased according to the indications. It would seem, however, that other methods of dosage have yielded results where this method has failed. Awaiting the subsidence of a reaction generally gives the spacing of the dosage of from three to seven days.

It is evident that no hard and fast rules can be laid down as to dosage since it is impossible to determine beforehand what degree of active immunity a case is capable of developing, or the resistance of the individual. The tendency is toward larger dosage than that heretofore advocated. It is quite generally conceded that cases of chronic gonorrheal arthritis require a dosage ranging from 50 to 500 million bacteria.

In furunculosis and carbuncle the dose of staphyloccoci may be run up to several billion bacteria. In acne, and streptococcic infections, the tendency is toward more conservative dosage—within a limit of fifty or one hundred million bacteria. The tendency in the case of pneumo, typhoid, and coli vaccines is to employ larger dosage.

Within a radius of a hundred miles of San Francisco there are hundreds of physicians employing bacterial vaccines in their daily work. Many of them are getting good results and are using these products extensively. Others have had no results and want to know the reason why. Why do not more of these men report their experiences to their local bodies and the medical journals? Is it not worth while even though the results may not be announced before the world in glaring headlines? There is an urgent need for reports on the use of bacterial vaccines and biologic laboratories cannot supply satisfactory data without the physician's co-operation.

To quote again from New and Nonofficial Remedies—"Bacterial vaccines are used to aid the production of an active immunity. Great care and skill are necessary for their proper use and no definite statements as to dosage, etc., can be given; the physician must be guided by the condition of the patient and the manner in which the latter reacts to the treatment."

San Francisco, Oct. 24, 1911

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

Notice.

To Members of the Pacific Coast Oto-Ophthalmological Society:

The following letter will explain why the joint session with the Eye, Ear, Nose and Throat Section of the California State Medical Society will not take place this year as advertised, but will be postponed until further notice:

(Copy.)

San Francisco, March 1, 1912.

P. M. Jones, M. D.,
Secretary California State Medical Society.

My Dear Doctor—From our conversation of today I am definitely informed that the Pacific Coast Oto-Ophthalmological Society cannot appear officially at the meeting of the California State Medical Society, because the Pacific Coast Oto-Ophthalmological Society has not made formal request of the Directors of the California State Medical Society. Therefore, we deem it advisable to postpone the meeting of the Pacific Coast Oto-Ophthalmological Society until co-operation can be brought about in a perfectly friendly and harmonious way.

Very truly yours,
CULLEN F. WELTY,
Secretary of Executive Committee.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1912, the following meetings were held:

Medical Section, February 6th, 1912.

1. Address by Mr. Frank Somers.
2. Address by Mr. C. H. Bentley.

Discussion by Harry M. Sherman, M. D., M. W. Fredrick, M. D., James T. Watkins, M. D., C. G. Kenyon, M. D.

3. The Hemolytic and Bactericidal Powers of "Paraffin" Plasma and Serum. Thomas Addis, M. D. Discussed by Wm. Ophuls, M. D., and L. S. Schmitt, M. D. (This paper will appear in the Journal of Infectious Diseases.)

4. A Plea for the Early Recognition and Proper Treatment of Hemorrhagic Disease in the New Born. E. Charles Fleischner, M. D. Discussed by Langley Porter, M. D., W. B. Lewitt, M. D. H. D'Arcy Power, M. D., A. J. Lartigau, M. D., L. Breitstein, M. D., Thomas Addis, M. D., and E. Charles Fleischner, M. D. (This paper will be published at a later date in the California State Journal of Medicine.)

5. Demonstration of Specimens of Sporotrichosis. Ernest D. Chipman, M. D.

General Meeting, February 13th, 1912.

1. Arthritis Deformans. A. L. Fisher, M. D. Discussed by C. C. Crane, M. D., Julius Rosenstirn, M. D., Langley Porter, M. D., R. B. Scheier, M. D., and A. L. Fisher, M. D.

2. The Sociological Side of Medicine. Philip Mills Jones, M. D. Discussed by Langley Porter, M. D., Raymond Russ, M. D., Julius Rosenstirn, M. D., and Philip Mills Jones, M. D.

Surgical Section, February 20th, 1912.

1. The Choice of an Anesthetic. Caroline B. Palmer, M. D.

2. The Present Status of Nitrous Oxide in Major Surgery. Mary Botsford, M. D.

3. A Practical and Simple Method of Maintaining Respiration During Operations Involving Opening of the Chest Cavity. Sterling Bunnell, M. D. (This paper is to be published in J. A. M. A.)

General discussion by Edith Hammond Williams, M. D., Mary Murphy, M. D., Dudley Tait, M. D., W. I. Terry, M. D., Harry M. Sherman, M. D., Caroline B. Palmer, M. D., Mary Botsford, M. D., Sterling Bunnell, M. D.

Eye, Ear, Nose and Throat Section, February 27th, 1912.

1. Preliminary Report of a Case of Ocular Tuberculosis Involving the Uveal Tracts and Vitreous of Both Eyes. E. D. Shortlidge, M. D. Discussed by Anna Flynn, M. D., W. S. Franklin, M. D., P. de Obarrio, M. D., Wm. F. Blake, M. D.
2. Presentation of a Case of Myringitis of Unknown Origin. Henry Horn, M. D. Discussed by H. B. Graham, M. D., W. S. Franklin, M. D., Henry Horn, M. D.
3. Demonstration of a case of Tonsillectomy Complicated by Post-diphtheritic Paresis. J. J. Kingwell, M. D. Discussed by Henry Horn, M. D., Cullen F. Welty, M. D., W. S. Franklin, M. D., J. J. Kingwell, M. D.
4. Report of an Operation on Ethnoid Sinuses. Cullen F. Welty, M. D. Discussed by W. S. Franklin, M. D., Julius Rosenstirn, M. D., Rachel Ash, M. D., H. E. Castle, M. D., M. W. Fredrick, M. D., P. de Obarrio, M. D., Cullen F. Welty, M. D.
5. Lantern Slide Demonstration of the Accessory Cavities of the Nose. Cullen F. Welty, M. D.

SOCIETY REPORTS

CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the California Academy of Medicine was held Monday evening, Feb. 26th, 1912, at which the following program was given:

1. An Inquiry Into The History of Malaria in California, E. W. Twitchell, M. D. Discussed by Herbert Gunn, M. D., H. R. Oliver, M. D., Harry M. Sherman, M. D. and E. W. Tritchell, M. D.
2. Notes on Two Cases of Systemic Oidiomycosis. G. Y. Rusk, M. D. Discussed by Howard Morrow, M. D., H. R. Oliver, M. D. and G. Y. Rusk, M. D. (This paper will appear in The California Pathological Series).

W. F. Cummins, M. D. and Jacques Loeb, M. D. were elected to membership.

Refreshments were served at the close of the meeting.

COOPER COLLEGE SCIENCE CLUB.

The Cooper College Science Club held its regular monthly meeting on March 4th, 1912. The following scientific program was given:

1. A Few Cases of Tuberculosis. W. R. P. Clark, M. D. Discussed by W. W. Boardman, M. D., A. A. O'Neill, M. D., C. J. Teass, M. D., T. Addis, M. D., P. H. Luttrell, M. D., W. R. P. Clark, M. D.
2. Observations on the Diagnosis of some of the Diseases of the Upper Urinary Tract. R. L. Rigdon, M. D. Discussed by Adelaide Brown, M. D., C. J. Teass, M. D., R. L. Rigdon, M. D.
3. Trichiniasis. H. R. Oliver, M. D. Discussed by H. Gunn, M. D., H. R. Oliver, M. D.

Refreshments were served at the close of the program.

MERCED COUNTY.

The Merced County Medical Society met on February 29th at Merced. A paper on medical ethics was read and very generally discussed. Two new members were elected: Dr. J. L. Mudd, of Merced and Dr. E. L. Bunk, of Raymond, Madera County.

H. KYLBERG, Secretary.

POMONA BRANCH, LOS ANGELES COUNTY.

In February, Dr. Idris B. Gregory entertained the Pomona Branch of the Los Angeles County Society, together with the members of the San Bernardino County Society in the vicinity of Ontario, at her residence in that city. Papers were read by Dr. Smith and Dr. Kenyon of Pomona.

SAN BERNARDINO COUNTY.

The County Medical society held one of the most interesting and instructive meetings of the season last night at the County hospital in San Bernardino on invitation of the superintendent, Dr. P. M. Savage. After a short business session Dr. Savage was introduced and said that it gave him pleasure to entertain the members of the medical profession of the county and stated that it was his earnest desire to make the County hospital as highly efficient as possible in the treatment of the sick and at the same time to use the abundant clinical material there for the teaching and benefit of the medical profession as far as this could be done consistent with the best welfare of the patient.

The assistant superintendent, Miss Madge Ayres, then gave a short account of her experiences and methods of administration of anaesthetics as learned in something over 3000 cases while she was associated with the Mayo brothers in Rochester, Minn. Her paper was very instructive, was well received, and elicited many questions as to details. Dr. Savage then presented a remarkable case of brain abscess following a depressed fracture of the skull and outlined the history of the case and method of operation and demonstrated the patient in his present condition of recovery. The subject was discussed by Dr. B. F. Church, of Redlands, and Dr. McHugh, of Rialto. Another case of enormous abscess of the liver, followed by successful operation and complete recovery was presented. A patient who had long suffered from cancer of the stomach was shown together with the cancer which had involved a portion of the stomach the size of a small orange and had been successfully removed by operation. This patient had been entirely relieved of his symptoms and had gained in weight and it was hoped that the operation had been performed early enough so that the whole trouble had been removed. This case was ably discussed by Dr. H. W. Mills, of San Bernardino, and many others. The fourth and last case was an old fracture of the arm with a large callous which had grown out around one of the large nerves of the arm producing paralysis by pressure. This patient had been previously shown before the society at Redlands while paralysis was complete. Since that time an operation had been performed to free the nerve from the callous and the function of the arm had been almost completely restored.

Following the general discussion of these cases the doctors were invited to an adjoining room where a most dainty and appetizing luncheon was served by the young ladies connected with the hospital as nurses. There were twenty-seven doctors present. Those going from Redlands were: Drs. Davis, Tyler, Blythe, Church, Stillians, Hilliard, Taltavall, Shreck, Wagenseller and Verrinder.

TULARE COUNTY.

The regular meeting of the Tulare County Medical Society for February was held at Porterville on the 13th. Dr. J. B. Rosson, of Tulare, read a paper on Lodges and Examinations; Dr. S. A. Barber read a paper on Overlooked Injuries of the Shoulder Joint. At the close of the meeting a banquet was held at the Pioneer Hotel.

VACCINATION LAW.

When the anti-vaccinationists got the present vaccination law passed, they professed willingness to accept the provision that in case of an outbreak of smallpox, unvaccinated children should be excluded from the schools until the smallpox disappeared. But now that the actual situation confronts them they protest and insist that the rule ought to apply only in the case of a widespread epidemic. In other words, what they want is a law that will make vaccination optional with

the individual, and they will never rest satisfied with any law which makes it a community matter.

This is exactly the issue, and exactly on this point it must be met. If the prime purpose of vaccination were individual protection, then it might properly be left to each individual to determine whether he would take the slight but certain risks of vaccination or the great but remoter risks of smallpox. The only reason for taking steps to make vaccination practically universal is that its protection is a community protection. Individually, vaccination is not a certainty, nor a necessity. In an unvaccinated community the vaccinated individual is relatively but not entirely safe. He may get the smallpox. In a vaccinated community the unvaccinated individual is practically safe. He is susceptible to smallpox, but the community has guaranteed him against any likelihood of being exposed to it. So the whole thing is a community question. In a generally vaccinated community an epidemic of smallpox is impossible, though there may be individual cases, and an occasional one of these may affect a vaccinated person. In a generally unvaccinated community a smallpox epidemic is sooner or later inevitable, and belated individual vaccinations, when the epidemic comes, are by no means a certain individual protection.

It follows that communities must be generally vaccinated, and that it requires something more than an appeal to individual protection to get them vaccinated. So long as the community is generally vaccinated, the individual appeal is, in fact, meaningless. One cannot truthfully say to the separate individual that separately he needs vaccination; and the natural tendency of human nature is for each individual to regard himself individually, and to shift the communal burdens to others. It is like paying taxes. If nobody paid taxes, individual as well as communal life would be impossible. But any one individual could escape his personal tax without injuring the community enough to inconvenience him individually. Voluntary tax-paying has therefore been found impracticable. Each man will pay his taxes only upon some guarantee that the others will do so also. It is the same with vaccination. A disagreeable experience, with a remote incidental risk, is not going to be undergone by many individuals unless they have some satisfactory guarantee that others will undergo it also. Why should one contribute his share to the common protection, if that protection is not going to be accomplished?

The conclusion is that vaccination ought to be compulsory, with exceptions only when there is a medical reason, certified by medical authority, for making the exception. Those individuals to whom the vaccination is an undue risk may safely be left unvaccinated, provided they are the only ones. But in these days when the hallucination has become prevalent that the care of disease is a matter of creed and conscience, the conclusion has been drawn that exceptions should be made for conscientious as well as for physical reasons. That, too, might not produce any more exceptions than are safe, provided that it could be confined to objections that are really matters of conscience. A conscientious objection is a moral objection—a belief that vaccination is an immoral act. But in practice, "conscientious objection" means no more than a personal preference that others should do the community protection. That preference is too common an attribute of human nature to make it safe to allow it unrestricted control of communal acts. If there are to be exceptions to the vaccination requirement on other than medical grounds, those who choose to come under that exception must meet their community obligation in some other way. It is little enough to require of them that if they choose to be one sort of exception, they shall be another sort also. If they may attend school in ordinary times without the general requirement, they must stay away from school, in smallpox times, even though the epidemic has not reached serious proportions. It is to be hoped that no epidemic ever will reach those proportions. It will not, under present quarantine and vaccination regulation. It will, on some occasion—and no one can tell which—if these regulations are habitually relaxed.

Of course all this argument is based on the assumption that we are living in a real world, in which disease, and the prevention and cure of disease are facts, in regard to which there exists real knowledge. We are painfully conscious that there are persons who deny all these propositions. And we have often expressed the conclusion that the proper place for those persons to make that denial is the court where the microbe presides, and that the amount of liberty of conscience on these subjects that can be granted is the amount the microbe can be induced to yield. If the microbe is deaf, blind, mindless and ruthless, then, on these questions we are under a deaf, blind, mindless and ruthless rule, from which no mere process of argument can release us. In matters of disease, the microbe exercises legislative, executive and judicial powers. And he is no respecter of persons or conscience. We are not saying this is right. We are merely saying that those who think is it wrong must make their argument in the microbe's court, and get their hearing as the microbe will grant. For the microbe has—and exercises—the power of life and death. That may be wrong too. But tell it to the microbe.—Fresno Republican.

BOOK REVIEWS

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A. B., M. D., W. B. Saunders Company, Philadelphia and London, 1911.

The difficulty in writing text-books about any of the specialties is to be sufficiently brief for the practitioner and sufficiently comprehensive for the specialist. The author of this volume has not attempted the impossible. The result is a book of five hundred and seventy three pages from which doctrinal discussions are eliminated and in which the essential facts of diagnosis and treatment are consistently kept in the foreground. The volume is eminently, therefore, one for practitioners, but so well is the author abreast of the progress in his subject and so judiciously is the best thought of all countries presented that the book cannot fail to appeal to specialists and particularly to those who are teaching. The author follows the more usual classification on a pathologic basis which cannot be criticized as a defect though it is open to question if a grouping of diseases according to etiology will not be more helpful to practitioners. No attempt has been made at colored illustrations which is perhaps excellent judgment for such plates unless of exceptional merit are quite as likely to be misleading as helpful.

A pleasant omission from this volume is the use of such terms as mag. carb., ac. arsen., hydrarg. biniod. etc. Most of the author's prescriptions are conscientiously completed. The habit of slip-shod abbreviation in prescription writing should not pass unrebuked, for it is of paramount importance that our text-books should teach by example as well as by precept.

The distinctive feature of the volume is the chapter on the acute eruptive fevers. In no department of medicine is an authoritative ready reference more essential than in this and the practitioner will find here within easy reach the very facts he is at all likely to need. An interesting

chapter on actino-therapy, radio-therapy, opsono-therapy and refrigeration will keep the reader informed of the progress to date in these various modes of treatment. Careful examination of the volume leaves one with the agreeable impression that both the author and his publishers have done their respective tasks so well that there is little to criticize and much to praise.

E. D. C.

Practical Medical Series, 1911, vol. IX—Skin and Venereal Diseases. By William L. Baum, M. D., and Miscellaneous Topics by Harold N. Moyer, M. D. The Year Book Publishers, Chicago, 1911. Price $1.50.

The attempt to combine in one small volume the Year's literature concerning dermatology, venereal diseases and various miscellaneous topics connected with medicine would argue either for paucity of material or incompleteness of treatment. In this volume dermatology occupies sixty eight pages, Genito-urinary Medicine and Surgery ninety eight pages while the remainder of the book is devoted to such subjects as Medical History, Insurance, Medico-legal Questions and Sociology. It is regrettable that the authors have not found sufficient material of interest to fill one volume devoted exclusively to skin and vereal diseases. However interesting the extraneous articles may be they tend to give to the volume the effect of something put together in a hurry. In the limited space alloted to dermatology room has been found for commendable articles on pellagra, lepra and fungus infections of the finger nails. Nevertheless a comparison of the year's literature in dermatology with the sixty eight pages representing it leads inevitably to the conclusion that the ground has been insufficiently covered. Genito-urinary diseases, which include Syphilis about which an entirely new literature is rapidly developing, are quite as curtly treated. Even Salvarsan is dismissed with a few desultory references. It is to be hoped that this book will not be accepted by practitioners as a true reflex of progress in the specialties which it professes to epitomize.

E. D. C.

Text-Book of Meat Hygiene. By Richard Edelmann, Ph. D. Authorized translation revised for America by John R. Mohler, A. M., V. M. D., and Adolph Eichhorn, D. V. S. Published by Lea & Febiger, Philadelphia and New York, 1911.

I have reviewed with pleasure the Text-Book on Meat Hygiene by Richard Edelmann and unhesitatingly state that I know of no other work that can compare with its clear, concise and practical presentation of the important subject of meat and meat-food products, their inspection and judgment. For health officers and inspectors it is an invaluable aid and guide, because it covers this field of their work in detail with a minimum amount of reading. From the standpoint of the medical practitioner it supplies a long felt need, in that it gives in detail the preparation of one of the most important articles of food for human consumption, from the time the animal arrives at the abattoir until it reaches the consumer, describing all the pathological changes resulting from diseases peculiar to animals, which render meat or its products unwholesome for food purposes. Unwholesome meat and meat products, fish, poultry, game, etc., are causes of illness only too frequently overlooked or underestimated by the busy practitioner, because of the lack of training in the detection, or even existence, of the subterfuges resorted to by unscrupulous dealers to cover up pathological conditions and post-mortem changes that occur in this food product. It is a valuable adjunct to any library.

W. C. HASSLER.

THE MOOSE DOCTOR IN CANONSBURG.

The physician who does the Mooses' work here is paid at the munificent rate of 11 cents a month for each and every member. This amounts to $1.32 annually for medical and surgical services including surgical dressings. There are 290 of them and the year's work will bring him in the magnificent sum of $389.80 for which he has to take the dirty back talk of a lot of men who do not want him, and whose families will not tolerate him at all. He makes bi-weekly reports of all cases and is liable to suspension or dismissal at any time. Besides all this he is looked down on by the rest of the profession as a low-brow who cares for himself only. Surely no intelligent young man would care to enter this class if he but knew what it leads to.—Medical Program, Washington County, Penn.

Clinical Diagnoses. By Charles Phillips Emerson, A. B., M. D., Late Resident Physician, The Johns Hopkins Hospital, and Associate in Medicine, The Johns Hopkins University; Professor of Medicine, Indiana University School of Medicine. Third Edition. Philadelphia and London. Price, $5.00. J. B. Lippincott, 1911.

Three years have elapsed between the second and third editions of this valuable text-book. This time is too short for the contribution of much that is new, "whose value is reasonably certain," as the author says in his preface. However, about forty important pages have been added, including the use of antiformin for the detection of tubercle bacilli and the newer tests for the estimation of the functional activity of the stomach, the intestines, and the kidney. Some further information is given concerning the viscosity of the blood, the parasitology of the feces, and the pathology of the cerebro-spinal fluid. Dr. Wm. L. Moss has rewritten his sections on Opsonins and the Wassermann Reaction. Dr. Emerson speaks from actual experience, therefore the student and the general practitioner will find this excellent work a most reliable guide in the clinical laboratory.

R. L. ASH.

DR. ELIAS S. COOPER, SURGEON.

In a recent "Bulletin of the Society of Medical History of Chicago," it is recorded among other incidents in the early history of medicine in Illinois that "Dr. Elias S. Cooper was the first man to use chloroform as an anesthetic, west of Pennsylvania."

"Also it is mentioned that he was the competitor of Dr. Joseph Freer for the position of Demonstrator of Anatomy in Rush Medical College; an active member in the early proceedings of the Peoria Medical Society."

"He studied Anatomy and Surgery in Paris. He built the first hospital in Peoria, Illinois, and later he removed to San Francisco where he became the most renowned surgeon on the Pacific Slope and in whose honor Cooper Medical College was named."

From the foregoing incidents it appears that Dr. Cooper began his career with the same spirit of progress and zeal in his profession which characterized his advent in California and made him the pioneer worker in research, medical education and medical journalism.

The writer of this historical note was a student assistant in the service of Dr. Daniel Brainard, Professor of Surgery in and founder of Rush

Medical College, and remembers the frequent mention of Dr. Cooper by Dr. Brainard, as a young surgeon of ability and promise whom he had encouraged and aided in his ambition to widen his field of opportunity by joining the tide of emigration at that time setting in for Oregon on the Pacific.

A brief sojourn in Oregon convinced Dr. Cooper that San Francisco was a better field for him to grow in, and to found a Medical School and to teach Surgery as his friend and ideal surgeon had done in founding Rush Medical College in Chicago.

Dr. Brainard was an enthusiastic investigator in science, discoverer and demonstrator of new procedures in surgery, and his papers commanded the attention and discussions of the Academy in Paris as I learned some years after from a friend and fellow member Baron Larrey, then the Surgeon in Chief of the French Army.

Naturally, an intimate association with Dr. Brainard who had earned his way to the head of the medical profession in Illinois, and the leader in medical education, would inspire the ambitious young surgeon, Dr. Cooper, who had already manifested a similar ambition, to follow in his footsteps and this train of events as I see them determined the establishment of the Medical College of the Pacific in San Francisco, which was the first School of Medicine on the Pacific Coast.

A few years later the nephew of Dr. Cooper, Dr. Levi Cooper Lane, came into the new College, also from Illinois, well equipped with scholastic attainments and sharing alike with Dr. Brainard and Dr. Cooper their love for surgery and exalted beneficence, a worthy follower to supplement and to perpetuate the great work of his uncle, Dr. Cooper.

It was through my pupilage and long association with Dr. Brainard that I came to know of Dr. Cooper and to know personally Dr. Lane.

Reviewing, after these many years, the character and achievements in the lives of these three men, I am impressed by the similarity of their abitions, their methods and their achievements.

The dominant spirit in their lives is concisely expressed by Dr. Lane in the dedicatory tablet in Lane Hospital, "for the advancement of the science and art of medicine and surgery for humanity's sake."

C. N. ELLINWOOD, M. D., LL. D.

NEWS NOTES FROM NEWSPAPERS.*

"And now the time has come to talk of other things.

"Of carpenters and sealing wax and cabbages and kings."

Dr. David Starr Jordan is to give a lecture on Social Hygiene at the Auditorium, Los Angeles, on April 2nd.

At Woodland, on February 23rd, Mr. Lackenback gave a public lecture on Bacteria and Disease.

Dr. G. C. Simmons, of Sacramento, has declined to be renominated for City Trustee; he states that he intends to go abroad.

Smallpox in San Bernardino County has caused about half the pupils, in some places, to be removed from the schools.

Dr. R. A. Buchanan, of Lodi, met with a serious accident in February, as a result of which he had to have his leg amputated.

Sanitary inspectors in San Francisco are hereafter to be physicians and are to be paid $200 per month and devote all their time to the work.

At Pasadena, Pomona and other places in the South, Dr. E. C. Jaeger, of Riverside, has been giving a course of public lectures on "Frenzied Health Wrecking."

A tuberculosis ward of the Sacramento County Hospital, planned by Dr. J. H. Parkinson and Dr. J. L. White, is to be constructed; work has been begun upon it.

The Sanatorium at Box Springs, which, it was contemplated, would be run as a semi-public institution, is to be taken over by Dr. Tucker and Dr. Griffith of Riverside.

Dr. Fred Baker, of San Diego, has returned after an absence of many months during which time he was with an exploring party in the Northern part of South America.

Dr. William Colby Rucker, who was Dr. Blue's assistant during the plague work in San Francisco, has been ordered to Washington where he is to be Dr. Blue's assistant once more.

The superintendent of the Butte County Hospital reports that whereas the average number of malarial patients treated has been about 25 per year, last year there were but four.

Dr. Howard M. Engle, of San Francisco, has been sued for $13,330 for alleged malpractice. Dr. Engle is not a member of the State Society and so, unfortunately for him, will have to defend the suit.

Dr. W. F. Snow, Secretary of the State Board of Health, attended the meeting of the Council on Medical Education of the American Medical Association at Chicago, the latter part of February, as the delegate from California.

Smallpox at Fresno has caused the exclusion of some 120 unvaccinated children from the schools. It is said that a citizen of that community, whose two children are not vaccinated, is to bring suit to test the present vaccination law.

Dr. A. E. Osborne, formerly of Santa Clara, and recently appointed Superintendent of the State Hospital at Napa, is said to be strongly in favor of constructing a number of sleeping porches similar to those in use at the Stockton institution.

Dr. Donald H. Currie has been assigned to plague work in California. Dr. F. E. Trotter, who has been quarantine officer at San Francisco, has been ordered to Honolulu. Dr. M. W. Glover has been made quarantine officer at San Francisco.

The doctors and lawyers of Monterey County got together at a banquet on February 22nd and seem to have told each other some humble truths and some amusing anecdotes. It is an excellent idea that might well be followed in other communities.

Dr. T. C. McCleave gave a public lecture on milk, its supply and contemination and the value of clean dairies and pure milk, at Stockton, February 23rd. It was illustrated with lantern slides showing how epidemics may be spread through the use of improper milk.

The Honolulu "Commercial Advertiser" states that, in all, seven leper patients have been released on parole by the board of health, all of whom have been apparently cured of the disease arrested through the carbon monoxide snow treatment of Dr. Wayson. All the patients on parole continue under observation.

The notorious Dr. M. G. Chenowith has been indicted and arrested under the charge of obtaining money by false pretense and the district attorney of San Francisco believes that he will be convicted, the case taking the same general lines as the Arberry case.

A quarantine station at San Pedro is being urged by the citizens of Los Angeles.

Dr. A. M. Henderson, of Sacramento, his wife and his sister-in-law have jointly bought the site of the Southern Pacific Hospital, 7th, 8th, F and G Streets, Sacramento, for $32,500.

Of making "Hospital Associations" there seems

* It is impossible to give credit to all these papers. We cannot be responsible for any errors.

to be no end. A new one has just been incorporated at Stockton called the "People's Hospital Association of California."

Rabies having appeared at San Francisco, the State Board of Health has established a station at Sacramento where patients may receive the Pasteur treatment, should the disease make its appearance in that section, as is more than likely it will.

Dr. N. K. Foster, in charge of the Health Department of the Oakland public schools, has urged the establishment of a municipal clinic for school children.

Senator Owen gives some good advice. As the Federal government spends a good deal of money looking after the health of hogs and none at all for the health of the people, his advice is—"Be a hog."

Smallpox has appeared at Truckee, three cases having been reported from that place in the last week in February.

Dr. Frank Rattan delivered a lecture to the Woman's Improvement Club of Martinez on the subject of general public health and the prevention of disease, putting particular emphasis on the fly nuisance.

Dr. W. P. Burke, who was given a ten-year sentence upon conviction of trying to dynamite Luetta Smith, was refused a rehearing by the appellate court and applied to the Supreme Court for a rehearing. His petition is typical of the sort of thing that is bringing our courts into popular disrepute, because of their activity in the interests of the pure technicality. He claims that the verdict should be set aside because the indictment was insufficient in that it did not contain a description of the place where he was alleged to have set off the dynamite.

A peculiar accident happened to Dr. W. H. Baldwin of Sacramento. He cranked his automobile, started the engine and the machine promptly ran over him, breaking several ribs and causing internal injuries.

An amusing item is dated from Cleveland where, it is said, several society women took advantage of the lenten "off season" to have appendectomies performed.

The Rev. R. E. Blight (singularly appropriate name) has been delivering more lectures in the South, passionately advocating "medical freedom;" everything should be free, even disease. There should be proper regulation, of course, but no proposed form of health regulation is considered by Mr. Blight and his ilk, as "proper." Same old fake.

A case of smallpox appeared in Redding the latter part of February.

The San Bernardino County Medical Society has sent out a considerable number of bulletins relating to the Owen bill and the "league for medical freedom." This ought to help educate the people in that county.

Hookworm patients, to the number of 140,000, were treated by the Rockefeller Commission during the last year. The cost of the work is said to have been $148,000.

A case of smallpox has been reported from Chico.

Dr. W. A. Clark, for eighteen years superintendent of the Alameda County Infirmary, has resigned and Dr. C. A. Wills has been appointed.

Dr. B. F. Surryhne delivered an address on Tuberculosis before the Woman's Club at Modesto.

Several newspapers scattered about the State are, from time to time, publishing editorials on public health matters and medical advances. It would be a good thing for the people if more newspapers would do the same thing.

The Tuberculosis Commission had a meeting at Sacramento on February 24th. The Commission, under the direction of the State Board of Health, is to investigate the condition of tuberculosis in California and to report to the legislature. Dr. George H. Kress, of Los Angeles, is the Chairman of the Commission.

Prof. Leslie, of the Los Angeles School Department, has advocated the establishment of a psychoclinicist to examine into the psychology of the school children. Not a bad idea.

Measles was epidemic in Fresno from January till about the middle of March; something over 70 cases occurred and kept Dr. George H. Aiken, the County Health Officer, busy quarantining people.

W. B. Saunders Co., 925 Walnut street, Philadelphia, has issued a new catalog of books that is well worth looking through. A request to them will bring it to you and prove interesting.

The sort of trade literature that is really of value and not merely a nuisance is well illustrated in the pamphlet on "Why Digitalis Sometimes Fails," issued by the Hoffmann-La Roche Co. It has nothing to say for itself about its own preparation but merely compiles a large number of extracts from various publications on the subject of digitalis.

Dr. S. S. Bogle, for many years County Health Officer of Sonoma County, has resigned and Dr. P. A. Meneray has been appointed.

The new vaccination law is in trouble at Fresno. The School Board has refused to accept the order of the Health Board and exclude from school all unvaccinated children; they apply the exclusion rule only to children living in the same block with the quarantined smallpox patient. The case will probably be fought out in the courts.

In Sacramento some citizens have started a rumpus, alleging that paupers who die in the County Hospital are merely weighted and dumped in a sump behind the building. It is a rather gruesome tale that the newspapers tell and probably is greatly exaggerated.

Smallpox has been reported at Coalinga and at Watsonville.

The Tubercular Hospital at the Veterans Home, Los Angeles County, has been completed and will be occupied and in use as soon as the furniture is installed. From the descriptions printed, it seems to be an excellently planned and constructed building.

"Reports of the Chemical Laboratory of the American Medical Association," Volume 4, January to December, 1911, is now issued and ready for distribution. Copies may be had for twenty-five cents each upon application to the Association, 535 Dearborn Avenue, Chicago. Every member of the Association should have a copy of this instructive pamphlet and should read it. Few of us have any realization of the enormous work the Association Laboratory is doing, or its very great value to the people and to the medical profession.

Dr. Stanley Black, health officer of Pasadena, quarantined a patient suspected of having smallpox. This created quite a storm of protest and when it was subsequently found that the patient did not have smallpox, Dr. Black resigned in order to quiet the tempest that had blown up.

Rabies in San Francisco is a long way from being merely a theory. In February, twelve persons were bitten by two dogs, one of which was later proven to have rabies. Of these twelve people, four refused to take the Pasteur treatment. One of them is dead at the time of writing. A full report of some of these cases will appear in an early issue of the Journal.

"DR. MENZ; A WARNING!

The Santa Clara County Medical Society has requested the Journal to extend a warning to the physicians of the State against a person calling himself Dr. Menz. "This gentleman proved himself a 'slick citizen' by approaching a number of our medical men with a well rehearsed hard luck story and relieving them of sums of money ranging from two to fifteen dollars none of which has ever been repaid. Similar reports come to us from Riverside and Los Angeles.

CHINOSOL CRITICISED IN ERROR.

In the March number of the Journal "chinosol" was listed in error with sundry nostrums. Chinosol has been approved by the Council on Pharmacy and Chemistry and is in every way a reputable preparation. Its inclusion was merely an oversight, much to be regretted for the reason that there are plenty of bad nostrums without dragging in any preparation that is worthy of approval. It may be said in passing that this statement is made gratuitously; we have received no complaints and no threatening letters from the Chinosol Company, for which we wish to extend our thanks and appreciation.

NEW AND NON-OFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies, 1912 and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies":

Neisser Bacterin Mixed, a gonococcus Vaccine, each cc. being said to contain approximately 100 million each of killed staphylococcus (aureus, albus and citreus) and 50 million each of streptococci, B. Coli, B. pseudo-diptheriae and gonococci. It is marketed in packages of four 1 cc. ampules. Also marketed in vials of 20 cc. and in 4 syringes, Syringe A being of the composition mentioned above and constituting the initial dose, while Syringes B. C. and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Pneumo-Bacterin Mixed, a pneumococcus vaccine, each cc. being said to contain 50 million killed pneumococci, 25 million killed streptococci and 50 million killed staphylococci. Also marketed in vials of 20 cc. and in packages of 4 syringes, Syringe A being of the composition mentioned above and constituting the initial dose, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Scarlatina-Bacterin (Scarlet Fever Vaccine), a streptococcus vaccine, consisting of a suspension of killed streptococci obtained from scarlet fever cases. Marketed in packages of 4 syringes, Syringe A containing 50 million killed streptococci, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amounts of bacteria contained in Syringe A. It is also marketed for immunizing purposes in packages containing 3 doses ready for use and sufficient to immunize 1 person. Also in 20 cc. vials, sufficient for immunizing 5 persons. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Typho-Bacterin Immunizing, a typhoid vaccine, marketed in packages containing 3 syringes; the contents to be injected subcutaneously at intervals of ten days. Hospital-size packages contain 30 ampules, in sets of three. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Staphylo-Bacterin Mixed, a staphylococcus vaccine, composed of a suspension, each cc. containing 25 million killed streptococci, 100 million killed staphylococci and 50 million killed B. coli. It is marketed in packages of four 1 cc. ampules. Also in 20 cc. vials and in packages of 4 syringes, Syringe A being of the composition given above, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Von Pirquet Test for Tuberculosis consists of old tuberculin in capillary tubes. Each tube contains old tuberculin sufficient for one test. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Rabies' vaccine is an antirabic vaccine prepared according to the method of Pasteur. It is a complete treatment, consisting of 25 doses, to be administered during 21 days. Each day's injection is shipped in a Caloris vacuum bottle. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Bass Test for Typhoid Fever is a modification of the method of Widal consisting of a suspension or emulsion of killed typhoid bacilli, a glass slide on which to mix the emulsion with suspected blood, a slide with dried smear of infected blood, a needle for pricking ear or finger to obtain suspected blood from the patient and a pipette for dropping typhoid emulsion and water on slide, previous to mixing with suspected blood. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Mulford's Widal Test Outfit is a means of applying Borden's modification of Widal's Test. In this test the serum of the blood is mixed with salt solution and then with a suspension of killed typhoid baccilli, so as to bring the dilution up to 1 to 50. The positive reaction is determined by noting that the clumps of bacteria sink to the bottom of the test tube and leave a limpid, clear fluid above a small, white flocculent mass of agglutinated baccilli. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Gynoval is isoborneol isovalerate, CH_3 CH (CH_3) CH_2 COO C_{10} H_{17}. It is closely related to bornyval (see N. N. R., 1912, p. 49). It is difficultly soluble in water. The action of gynoval is said to be that of a mild nervine and antispasmodic, resembling that of valerian, with the advantages of a much more agreeable odor and of being better tolerated, especially not giving rise to unpleasant eructations. Like other valerian preparations, it is said to be indicated in nervous headaches, nervous insomnia, nervous disorders of the climacteric, hysteria, cardiac and gastric neuroses and neurasthenia. 0.25 to 0.50 gm. (4 to 8 grains) two to four times daily, best given after meals. Gynoval is marketed in the form of gynoval pearls, containing 0.25 gm. (4 grains) gynoval. Farbenfabriken of Elberfeld Co., New York (Jour. A. M. A., Feb. 10, 1912, p. 411).

Exsiccated sodium succinate (Sodii Succinas Exsiccatus) is the disodium salt of succinic acid containing not less than 95 per cent. anhydrous sodium succinate, NaOOC CH_2 CH_2 COONa. It is a white granular odorless powder, possessing a characteristic saline taste. It is readily soluble in water, but insoluble in alcohol. ether and chloroform. It is a saline cathartic claimed by some to have an antiseptic action in the biliary tract and to be useful in combating infections of the gall bladder and biliary passages. Dose, 0.3 gm. (5 grains) three or four times a day. Manufactured by Fairchild Bros. & Foster, New York, and by Merck & Co., New York (Jour. A. M. A., Feb. 24, 1912, p. 554).

To the Editor of the California State Journal of Medicine:

In the discussion of Dr. R. A. Peers' paper in the March number of the State Journal, I find the following remarks attributed to our distinguished colleague, Dr. Philip King Brown:

"Regarding the use of tuberculin, I want to say not only of tuberculin but of preparations of arsenic, that it is an exceedingly dangerous thing to draw deductions when the patients use two remedies, particularly tuberculin intravenously, which is against all human laws for the use of tuberculin."

Assuming Dr. Brown to be correctly reported, his statement fills me with considerable alarm. Be it noted that the words are "human law." If the same came from anyone less noted for mastery of the English language and lucidity of scientific expression, I would naturally have surmised that natural law, divine law, or scientific doctrine was really meant; but then the statement would be meaningless, and with Dr. Philip King Brown as its author, that is impossible. It must, therefore, mean just "human law," and some fanatical legislature has forbidden intravenous injections. Now this is a matter of serious concern to the writer, because he has been in the habit of injecting just these very medicaments intravenously, and hoped to continue the practice. Will Dr. Philip King Brown kindly tell me when and where the statute was passed? MAX ROTHSCHILD.

IN FREEDOM'S NAME.

Once more the Republican feels bound to rush to the defense of the Medical Freedomists. If medicine, like religion, is a matter of sects (and it is on this contention that the whole of Medical Freedomism rests) then the guarantee against sectarian teaching in the schools must apply to medicine as well as to religion. But the present course of study in the schools of California includes the most blatant sectarianism, in matters hygienic and physiologic. The children, for instance, are being taught that malaria is transmitted by mosquitoes. That is, to be sure, a demonstrated scientific fact, but shall the state establish Science, when there are sects which deny it? There are those who say that malaria is tranmitted by fear, or unfaith, or by malicious animal magnetism. Just now the children are being taught that tetanus, or lockjaw, is caused by certain bacteria, found in dirt, which may infect a wound made by a dirty object. That, too, is a demonstrated scientific fact. But there is a sect whose creed is that lockjaw is caused by a displacement of the third cervical vertebra, and another which subscribes to the dogma that it is a variant of the itch. Moreover, everybody's grandmother knows that it is caused by none of these things, but is a mere reflex of the agonizing pain produced by impalement on a rusty nail. With all these faiths prevalent, shall the schools arbitrarily select that one among them which happens to be scientifically proved? That would be enthroning science above faith, which is exactly what the League of Medical Freedom was formed to prevent. They are teaching hygiene in the schools, and among other things they teach that a daily bath is good, especially for babies. That is outright sectarianism, not merely medical, but religious. For there is a church in Fresno whose chief scripture teaches in so many words that there is no more reason for immersing a baby daily in water than there would be for taking a fish daily out of the water and exposing it to air. The children in school are taught to boil all suspicious water. But there is a sect which teaches that the only thing wrong with the water is the suspicion, and that the remedy is not to suspect it. And all the children are taught that tuberculosis is transmitted by careless spitting and is prevented and cured by fresh air. All these are material things, and the teaching in regard to them squarely contradicts the doctrine that disease is a phenomenon of mortal mind, to be cured by getting on another spiritual plane.

We call on the League of Medical Freedom to protest. For the fundamental tenet of that League is that there is no such thing as positive fact or definite knowledge in the field of disease and health, but only various creeds and the sectarian practices founded in these faiths. If this tenet is correct, then science is only one sect among others and must be banished from the schools. There is no answer to this argument except to deny the tenet in toto. And for that denial there could be no basis except the evidence of the senses and of the reason, and the consensus of the informed opinion of the world. Shall Faith yield to mere knowledge? Not if the League of Medical Freedom can help it.—Fresno Republican.

CHANGE OF ADDRESSES.

Gage, C. E., from 1472 23rd St., Los Angeles, to 418 Crocker St., Los Angeles.

Larswell, B. J., from Oroville to Portola, Cal.

Collings, H. A., from San Francisco to Winters, Cal.

Thompson, W., from Los Angeles to Huntington Beach, Cal.

Galehouse, F. C., from San Rafael to 816 Devisadero St., San Francisco.

Ledyard, C. C., from Wendling, Cal., to Cloverdale, Cal.

Ross, M. H., from 16th and Main Sts., Los Angeles, to Auditorium Bldg., Los Angeles.

Detling, F. E., from Laughlin Bldg., to Title Insurance Bldg., Los Angeles.

Miller, A. P., from Berkeley to Forum Bldg., Sacramento, Cal.

Wilson, G., from Odd Fellows' Bldg., Sacramento, to Forum Bldg., Sacramento.

Gundrum, F. F., from 1010½ J St., Sacramento, to 1021 10th St., Sacramento.

Shaw, F. E., from 2630 P St., Sacramento, to Hagelstein Bldg., Sacramento.

Wilcox, Wm. V., from Roseville to 501½ K St., Sacramento, Cal.

Dillon, G. P., from Box 73, Sacramento, to Ochsner Bldg., Sacramento, Cal.

Conrad, D. A., from 1302 State St., Santa Barbara to 1011 State St., Santa Barbara, Cal.

English, C. F., from Tuolumne to Ellis Bldg., Stockton.

Schroeder, Leo A., from County Hospital, Los Angeles, to Exchange Bldg., Los Angeles, Cal.

Slater, Jno. H., from 1231 Olive St., Los Angeles, to Security Bldg., Los Angeles, Cal.

McLaren, Jay L., from Oakland to H. W. Hellman Bldg., Los Angeles, Cal.

Tebbitt, Robt. L., from 701 Alvarado St., Los Angeles, to Grant Bldg., Los Angeles.

Ochsner, R. L., from 2007 Howard St., San Francisco, to Anglo Bldg. (16th and Mission Sts.), San Francisco.

Fellows, Alfred, from Los Angeles to Mesa, Arizona.

Pierce, R. E., from San Jose to Lindsay, Cal.

Clark, Geo. C., from Los Angeles, to Fullerton, Cal.

Lang, J. H., from address unknown to Fullerton, Cal.

Reynolds, Cecil E., from California Club to Title Insurance Bldg., Los Angeles, Cal.

Pottenger, F. M., from Union Trust Co., to Title Insurance Bldg., Los Angeles, Cal.

Lyon, S. B., from 2423 Fillmore St., San Francisco, to 2018 Sutter St., San Francisco.

Flagg, Don P., from 2440 W. 1st St., Los Angeles, to Bradbury Bldg., Los Angeles, Cal.

Bullard, Chas. T., from 644 Fairview Ave., Los Angeles, to 2118 Cambridge St., Los Angeles, Cal.

Cleary, George, from San Diego to Petaluma, Cal.

Butterfield, R. O., from 645 W. 15th St., Los Angeles, to 719 So. Alvarado St., Los Angeles.

Gibson, L. D., from addresses unknown to Eureka, Cal.

Adams, J. M., from Oakland to Centerville, Cal.

Blue, Rupert, from San Francisco to Washington, D. C. Care U. S. & P. H. S.

Domann, A. H., from Los Angeles to 1st National Bank Bldg., Orange, Cal.

Anderson, Chas., from R. F. D. No. 1, Santa Barbara, to Mt. Drive & Palm Ave., Montecito, Cal.

Bishop, Simeon, from 514 7th Ave., to 447 Eddy St., San Francisco.

Jackson, Jas. A., from addresses unknown, back to Scripps Bldg., San Diego.

Ellis, K. E. W., from San Diego to Bakersfield, Cal.

Biggs, E. L., from Trust & Savings Bldg., Los Angeles, to Title Ins. Bldg., Los Angeles.

Rucker, W. C., from San Francisco, to Bureau of Public Health & Marine Hospital Service, Washington, D. C.

Prusch, N. H., from 2344 Sutter St., to Pacific Bldg., San Francisco, Cal.

Hulme, F. W., from Union Sav. Bank Bldg., to Thayer Bldg., Oakland, Cal.

Holbrook, Geo. Story, from 406 Sutter St. to 391 Sutter St., San Francisco.

Hurd, Laura B., from 391 Sutter St., San Francisco, to 209 Post St., San Francisco.

Waterman, Helen J., from 3836 Sacramento St., San Francisco, to 391 Sutter St., San Francisco.

Percival, F. R., from 945 So. Olive St., Los Angeles, to 849 So. Grand, Los Angeles.

Ball, J. D., from Thornhill Road, Oakland, to Central Bank Bldg., Oakland, Cal.

Saunders, B. A., from Bellevue Hotel, San Francisco, to Sutter Hotel, San Francisco.

Loomis, M. L., from Consolidated Realty Bldg., Los Angeles, to California Club, Los Angeles.

Montgomery, H. B. B., from 1635 W. 23rd St., Los Angeles, to ———?

McKibbon, R. E., from Canada (in addresses unknown) to Napa, Cal., care Dr. Doherty.

Tillotson, C. A., from Holtville, Cal., to Coalinga, Cal.

Jennings, Chas. R., Campton, Cal.

Longshore, R. H., National City, Cal.

Keith, J. B., 2458 8th St., San Diego, Cal.

Bush, Alice, from 1243 Grove St., Oakland, to Union Sav. Bank Bldg., Oakland.

Mager, H. A., from 2012 Folsom St., to 931 Fillmore St., San Francisco.

Means, S. W., from addresses unknown to 146 Grant Ave., San Francisco.

Bakewell, Benj., from 1113 State St., Santa Barbara, to 1205 State St., Santa Barbara, Cal.

Miller, T. S., from 690 Market St. to Chronicle Bldg., San Francisco.

Emmal, F. S., from 2689 Howard St., San Francisco, to 391 Sutter St., San Francisco.

Thompson, C. H., from Berkeley to Novato, Cal.

Shields, Lillian, from First National Bank Building, Oakland, to Union Savings Bank Building, Oakland, Cal.

Werner, A. F., from 1155 Broadway to 1225 Broadway, Oakland, Cal.

Richards, J. F., from Bonita Apartments, San Francisco, to 18th and Castro Sts., San Francisco.

Knapp, E. V., from Presidio (General Hospital) to St. Luke's Hospital, San Francisco.

Clark, W. A., from San Leandro, Cal., to Claremont Manor, Oakland.

Purnell, W. W., from 1065 Washington St. to Physicians' Building, Oakland, Cal.

Webster, Geo. M., from Los Angeles, Cal., to Patton, Cal.

Peironnet, F. M., from Los Angeles back to Wilmington, Cal.

Osborne, A. E., from Santa Clara, Cal., to Napa State Hospital, Napa.

Staniford, K. J., from San Leandro to 323 Geary St., S. F.

Thibodeaux, Alex., from 1221 Greenwich St., San Francisco, to 323 Geary St., San Francisco.

Victors, Ernest A., from 323 Geary St. to 275 Post St., San Francisco.

Clark, J. Emmet, from 525 13th St., Oakland, to Thayer Bldg., Oakland.

Boggs, Walter D., from 46 Stevenson St., Pasadena, to 245 Oakland Ave., Pasadena, Cal.

Deckelman, Carlotta, from addresses unknown to 2304 Telegraph Ave., Oakland, Cal.

Byron, A. E., from 14th and Clay Sts., Oakland, to 525 10th St., Oakland, Cal.

Channell, W. L., from Union Savings Bank Bldg., Oakland, to 1028 Washington St., Oakland, Cal.

Cheeney, W. S., from San Francisco to 788 14th St., Oakland, Cal.

NEW MEMBERS.

Hileman, J. E., San Diego, Cal.
Nielsen, J. C. E., San Diego, Cal.
Dawley, L. B., San Diego, Cal.
Verrinder, H. F., Redlands, Cal.
Aldridge, J. W., San Bernardino, Cal.
Landon, G. F. S., San Bernardino, Cal.
McCoy, Wm. E., Pasadena, Cal.
Brem, W. V., Los Angeles, Cal.
Coffman, H. L., Palm Springs, Cal.
Eidenmuller, T. C., San Francisco, Cal.
McNulty, A. H., Hearst Bldg., San Francisco.
Edgecomb, T. J., Shasta, Cal.
Clark, Geo. C., Fullerton, Cal.
Janss, J., Anaheim, Cal.
Lang, J. H., Fullerton, Cal.
Prentice, Geo. L., Garden Grove, Cal.
Wells, Geo. S., Santa Barbara, Cal.
De Ville, Leon, San Diego, Cal.
Jennings, Chas. R., Compton, Cal.
Roberts, J. Margaret, Los Angeles, Cal.
Biggs, E. L., Los Angeles, Cal.
Schroeder, L. A., Los Angeles, Cal.
Flagg, Don P., Los Angeles, Cal.
Boggs, Walter De Witt, Pasadena, Cal.
Smith, H. H., Los Angeles, Cal.
Winn, Albert, San Pedro, Cal.
Gage, C. E., Los Angeles, Cal.
Dale, H. M., Los Angeles, Cal.
Hoyt, H. F., Long Beach, Cal.
Jeffs, Milton D. W., Los Angeles, Cal.
West, F. B., Los Angeles, Cal.
Wagner, F. J., Santa Monica, Cal.
Ward, E. D., Los Angeles, Cal.
Zuber, Augusta, Los Angeles, Cal.
Hicks, J. M., Santa Margarita, Cal.
Merrill, B. E., Santa Paula, Cal.
Mudd, J. L., Merced, Cal.
Dresser, R. O., Paso Robles, Cal.

RESIGNED.

Fellows, Alfred, Mesa, Arizona.

DEATHS.

Clark, Asa, Stockton, Cal.
Hill, Reuben W., Santa Barbara, Cal.
Harker, Geo. A., Mill Valley, Cal.
Gowan, J. S., Fulton, Cal.
McConkey, F. G., San Francisco, Cal.
Webster, L. R., Berkeley, Cal.
Cook, M. M., Durham, Cal.
Scholl, J. T., Los Angeles.